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Textile World

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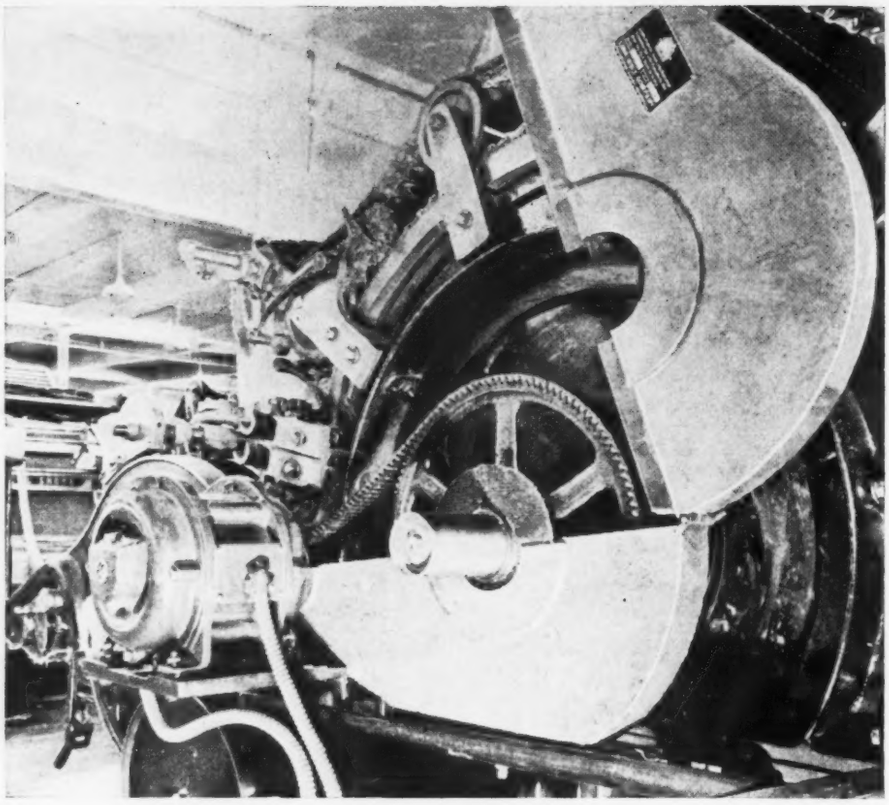

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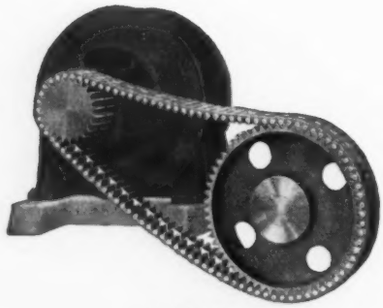

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Textile World

August, 1937

Editor: DOUGLAS G. WOOLF

We Turn Bullish— Without Guarantee

FOR the first time in some months we feel bullish on the outlook. Since we have felt free to share our gloom with readers in recent issues, we suppose we should be equally generous with our optimism.

The latter is based on three trends—two general and one specifically textile.

First, and most important, is the changed attitude so far as the labor situation is concerned. For the time being, the general labor crisis is over. This result was brought about by public opinion. We have called attention during recent months, on this page, to the gradual growth of resentment against excesses by groups in organized labor. This has finally reached the limit of endurance, and both CIO and A. F. of L. have been forced to hedge for the moment. Obviously, the duration of their abstinence is difficult to predict. However, the encouraging factor is that there *is* a limit beyond which pressure groups will not be permitted to go; knowledge of the existence of that restraint removes the fear of impending disaster which has gripped the country thus far this year.

THE second broad trend which makes us hopeful is the halt called to the change which was taking place in the Government at Washington. Very definitely, this has been checked; in fact, it is our opinion that the New Deal has given up, by its own acts, much of the power it has enjoyed ——and will never again occupy the dominating position that it held for four years.

We make that comment entirely without political bias. As our readers know, we have endorsed many of the objectives, and some of the methods, of the Administration. Particularly have we felt—and we still feel—that a program somewhat similar to NRA, but with its weaknesses corrected, offers the main hope of stability to industries like textiles.

■

Nevertheless, when the President announced his Supreme Court plan last February, we—in common with many others who were anxious to see some of the social objectives of the New Deal realized—sensed the development of a dangerous trend in Washington. The pace of this trend has accelerated alarmingly since that time—as we indicated in our warning last month against the tendency toward *personal* Government. Today, we welcome the curbing of that tendency as basically encouraging, although at the same time mourning this blow which liberalism — as so often in the past — has suffered from its own family.

FINALLY, we come to the textile trend which we find encouraging. As our readers know, the industry was riding high, wide and handsome during the latter months of 1936 and the first months of 1937. In the spring of this year, however, it became apparent that the pace had been a little too rapid. Since then, production has exceeded sales in many important branches of the industry, and the previously large back-logs of unfilled orders have been rapidly diminished. The outlook has been not too good — and there has been always imminent the threat of a complete collapse. Those who are familiar with periods of textile chaos know just how sweet they can be.

Within very recent weeks, we have sensed an under-surface trend which indicates to us that any such critical period will be averted—and that possibly we may even enter another major upswing in the fall. This trend is, specifically, the uncovering of a need for goods in some quarters, as reflected by inquiries received. This textile development, taken into consideration with the general trends outlined above, gives us real hope for the fall.

This is not a prediction; there are too many questionable factors at the moment. (The strike in the silk industry, and the uncertainty concerning raw cotton prices following the crop report are two which may be mentioned.) But it is an indication, which we hope to be able to convert into a prediction next month—or by October at least.

The Editor Says

Wages and Hours

AS this issue goes to press, the wage-hour bill has passed the Senate, but its fate in the House is still uncertain. The always difficult job of predicting the actions of Congress is made more so in this case by the dizzy developments in the final days of debate in the Senate, and in the period between the bill's passage there and its introduction into the House. Each day, the picture seemed to change.

Nevertheless, if we had to make a bet, we would incline toward the belief that the bill will become law at this session and in its basic structure will be similar to that passed by the Senate. Beyond that, we can't even hazard a guess. We don't know how many Christmas-tree trimmings the House may hang on the bill, nor what defects in the Senate version may escape correction in the House. Consequently, we don't know whether the final law will be a good or a bad law.

However, it is helpful for a moment to get back to the primary purpose of this legislation. The objective is to place a bottom under wages and a ceiling over hours, for the protection of employees and ethical employers. Those who can still remember the recent depression—and sometimes we wonder if many are not forgetting it too rapidly—will not need any details as to the necessity for that sort of restraint when business starts to go sour.

That objective is a very simple one. And yet, during its debate in Congress and its discussion in the press, it has often been complicated and even lost sight of. To some, the purpose seemed to be to establish rigid Government control over wages and hours. That is completely different from Government support to industry's wage and hour structure. To others, the purpose of the bill seemed to be to strengthen unionism. William Green, president of the American Federation of Labor, after forcing his amendments on the House Labor Committee, had the effrontery to say: "Through the adoption of these amendments the bill is made an effective collective bargaining statute." Who ever planned this bill as a collective-bargaining statute? The Wagner Act takes care of that. This bill was planned for the purpose outlined above. To the extent to which that purpose is diluted or obscured by "friendly" busy-bodies such as William Green, to that extent will hope for some sort of stability in the next depression be lost.

Of course, the truth is that union leaders do not want minimum wages and maximum hours set by a national law. Why should they? It means that the Government gives away to workers, free for the asking, the very things the union holds out as bait to prospective members. Look over the terms of a representative agreement signed by TWOC with textile mills: 40-hour week and $15 minimum wage. The bill passed by the Senate offered a 40-hour week and $16 minimum wage! Comment is superfluous.

The textile industry did its best to lend constructive help to Congress in framing the wage-hour measure. Organized labor did its best either to scuttle it or to shape it to its own selfish ends. It will be interesting to see which has its way.

The Southern Mill Village

FOR years we have been convinced that something should be done about the southern mill village. As far back as 1925, we argued in these columns that the villages should be placed on a paying basis. One of our main reasons was that thus one variable would be removed from the difficult question of comparative wages North and South. We urged "the allocation of all wages to the pay envelopes—and the charging, on a rational basis, for all community activities." We found that many of our good friends in the South agreed with us but didn't want to say so in print.

In 1929, T. M. Marchant stuck his neck out in an address before the Southern Textile Association. He said: "Why shouldn't southern manufacturers adjust such differences as rent on the mill cottages and other conveniences on a basis that is fair and equal, including the increase in the pay envelope?" He gave as his reason the same thought that we expressed above; he said that "the comparison (between sections) then would no doubt be on a more equal basis."

In calling attention to Mr. Marchant's remarks, we urged consideration of this subject by the American Cotton Manufacturers Association and the various State associations in the South, as a prelude to concerted action. We believe that if such a step had been taken, the bitterness developed by the wage-differential question in NRA days would have been reduced materially. We believe now that some such action at this time would help to eliminate some of the problems in the administration of Federal wage-hour legislation.

In trips to the South during recent months we have found an increasing number of manufacturers agreeing with us. Some are even taking preliminary, if only partway, steps by stepping up rentals. Just last month an important development was the sale of the Whitney village to the employees. (See page 72). Here is the point in that connection: With such cheap rentals as now exist, there is little incentive to home-ownership. The correction of this defect is one more vital result which can be expected from a basic change in the mill village system.

We are conscious of the difficulties involved. We realize that while in some cases—such as isolated mills whose villages serve practically 100% of the employees—the change would be merely a bookkeeping one, in others the existence of two groups of people—one paying cheap rent to the company and the other renting on the outside—presents a serious problem of adjustment.

However, we are confident that this adjustment must be made some day, and we think this is a good time to start.

And so we recommend the subject once more for study by associations in the South.

NEXT MONTH

The 13th Annual Rayon Year Book Number of TEXTILE WORLD, covering rayon and other synthetic fibers, will be published next month.

In the News

Wage-Hour Bill Developments

From TEXTILE WORLD'S Washington Office

When Administration strength in Congress rallied following the Court defeat, it became probable that the wages and hours bill, along with much of the White House program, would be realized late this session or early in the next. The bill passed the Senate July 31, and debate on it in the House was scheduled to start Aug. 12. Its fate will probably be known to our readers when this issue reaches them.

Mr. Roosevelt and his faithful followers started last Spring to put through a labor standards bill. Lately it has seemed that nobody, except the Administration, was active for this bill. Even the labor voters back home lacked interest, and thus Congress also. So it became the Administration's fight to win or lose almost single-handed. Of course many leaders of both labor and industry approved of the principles involved.

When the Senate got through with the Black Committee's bill it called for a Labor Standards Board that could adjust wages up to 40c. per hour, and hours not below 40 per week. Lewis and Green and industry, strangely combined, had knocked out Section Five which would have empowered the board to fix wages up to 80c. where collective bargaining was deemed inadequate.

Then when the House Labor Committee seemed about to report a similar, simple, 40-40 bill, William Green, apparently backed by the President, forced through the committee a group of amendments. Ostensibly the Green amendments purposed to make sure that the Board stayed out of labor's bargaining preserves. Actually, however, the amendments would oblige the board to accept wages and hours set up by collective bargaining in one place as prima facia basis of appropriate standards under like conditions elsewhere.

The measure as passed by the Senate provides a board of five men: one from each corner-section of the United States and one from the central; one will represent labor, another employers. It is estimated by labor authority that only 3,000,000 low-level workers in factories would be affected.

In general, employers who pay less than 40c., or work their help more than 40 hours, would have to explain why to the Labor Standards Board. If the Board did not see sub-standards justified, it would issue orders to conform. Likewise, employment of children under 16, or 18 in some occupations, would be forbidden. The Board would frown on the third shift, in an effort to spread employment, would ask proof of its necessity, and where granted might order time-and-a-half pay.

The bill says the act shall take effect immediately, but the board's orders cannot be applied for 120 days. And before the board can make an order, it must conduct hearings and digest the reports of advisory committees. Thus it would be probably not less than six months from the date of enactment before the first employers and workers would be affected.

Rayon Used For Yacht Sail

"Cordura," the strong rayon yarn recently developed by the Rayon Division, E. I. du Pont de Nemours & Co., for automobile tires now is being used for yacht sails. Fabric of this yarn has been employed in the quadrilateral jib of the cup-defender "Ranger" in the recent international sailing contests. The sail has a lacquer coating, designed to render it wind-resistant and to provide greater driving force.

Rayon sails were tried out in Genoa jibs on small boats last summer, with satisfactory results. The advantages claimed for rayon over the traditional cotton sails lie in its inherently smooth surface which retards "skin friction." The rayon sail is declared to be resistant to bias distortion, water repellant and mildew proof.

The "Ranger's" sail fabric is the product of Wamsutta Mills and made to specifications. It has an area of more than 4,000 sq.ft. and was made by Prescott Wilson Co., New York sailmakers.

Courtesy E. I. du Pont de Nemours & Co.

The victorious cup-defender Ranger which sailed into the International Races with a quadrilateral jib made of rayon. The sail is shown at the right above. Sample of fabric shown below.

American Woolen's Big Profit Increase

Profit of $3,393,552, after all charges except Federal income and undistributed profits taxes, is reported by the American Woolen Co. for the first six months of this year. This compares with $1,098,-162 for the first half of 1936, a rise of 210%. Net sales for the 1937 half totaled $45,284,753, compared with $33,-654,148 for the 1936 half, a rise of 36%. Profit was 7½% of 1937 sales, compared with 3¼% in similar 1936 period. For the full year of 1936 net profit was $1,929,982, and for 1935, $2,740,598.

Although a good showing for 1937 was expected, the big company's profit achievement surprised many in the trade since the wage advances and social security taxes had presumably not been anticipated at the start of the year. The company's increased volume and steady price policy however played their part in overcoming the heavier cost load.

Philippine Pact Is Extended

The existing arrangement between the United States and Japan relating to the importation of cotton piece goods from the latter country into the Philippine Islands, which was due to expire July 31, was extended for another year. Under the arrangement, the Association of Japanese Exporters of Cotton Piece Goods into the Philippines limited the annual importation of Japanese piece goods to 45,000,000 sq. meters.

This and That

◆ A bill introduced by Senator Bilbo, of Mississippi, would provide for a great regional research laboratory for development of agricultural research, beginning with cotton. The Federal Government would contribute $250,000 and the Cotton States an equal sum.

◆ Competition in raw cotton from Brazil will be formidable from now on, according to Joseph C. Rovensky, of the Chase National Bank, in an address before the Rotary Club of New York, July 15. "When a bale of cotton from Sao Paolo meets a bale from Houston on the dock at Liverpool, it no longer has to take off its hat," he said.

◆ Carolinas-Virginia Purchasing Agents Association met at Asheville, N. C., July 30 and 31. There was heavy representation of the textile industry. J. E. Sirrine, of Greenville, addressed the gathering.

LOOMFIXERS' MANUAL

COTTON SECTION—*CHAPTER I*

By Ivar Moberg

Loom Construction

DUE to the fact that practically every motion of a loom is a slap, a jerk, a blow, an oscillation, a reciprocation, or some other severely irregular action, it is essential that the framework be of a very sturdy construction. It is for this reason that a loom is probably the heaviest of all machines in proportion to its power consumption. An ordinary loom, requiring less than 1 hp., and in many cases less than ½ hp., weighs between 2,000 and 3,000 lb. Practically every loom part has a strength many times that needed if the loom were a quietly, smoothly running machine.

Not only must the framework be sturdily designed to withstand the terrific vibration set up by the various loom motions, but all parts must be perfectly fitted into place and lock washers must be used on all bolts to prevent them from coming loose.

The framework of a loom, pictured in Figs. C1 and C2, comprises the following parts: (1) right-hand loomside, (2) left-hand loomside, (3) front girt, (4) back girt, (5) cross girts, (6) breast beam, (7) arch (if in parts, right-hand and left-hand arch ends and arch connection), and (8) drag bars (if whip roll is not used).

On modern looms all the surfaces of the framework which come in contact with other parts are machined. This is precision work and is in wide contrast to the old looms, in which raw castings were placed against raw castings and bolted together without much fitting, except for the insertion of an occasional shim. Many a time this example of poor mechanics was the cause of castings being out of line, out of level, and out of plumb; but it was "only a loom casting" and nothing better was required of it. It is true that the old looms did run—after a fashion—and that many mills rose to prosperity on them; but at that time weavers were running six to eight looms each, while today they run many times that, and furthermore loom speeds were lower.

In modern looms a replacement part can be attached with little or no fitting—provided, however, that the original precision of the machine has been maintained by the keeping of parts in line, level, and plumb. With machined contact surfaces, the parts are seated much more securely and have a much greater resistance to shaking loose.

Assembly Procedure

As a general rule, looms come from the builders completely assembled; but sometimes it is necessary for the mill to assemble a loom which for one reason or other has been dismantled.

If the loom is assembled in its ultimate position, the loomsides are first placed in the correct position, squared off, and leveled both individually and in relation to each other. If the loom is going to be moved after the assembly, the loomsides should be placed on carefully leveled skids, squared off, and checked for level as previously mentioned.[1]

Crompton & Knowles' instructions for squaring the loom frame, according to Albert Palmer, are as follows:

"To check the loom framework for squareness, the distance from one corner of the frame to that diagonally opposite should be compared with the same dimensions from the other two corresponding corners. When the diagonals are equal, the frame should be square, provided all measurements are taken from corresponding points of the loomsides."

With new looms leaving the shop, Crompton & Knowles provides the diagram shown as Fig. C2, plus the following instructions for leveling:

"This loom must be leveled before run under power.

"This loom is constructed with far greater accuracy than looms built heretofore. The main shaft bearings are precisely located, and shafts and bearings are fitted to the loom with great care.

"In order to avoid cramping, it is essential that the loom be level front to back (use machined surface on top of each loomside on which to set spirit level) and end to end (set spirit level on bottom shaft).

"Precision machinery must be handled as such."

These instructions might well be applied to any kind of loom.

Next, bolt the back girt and front girt to the loomsides, checking them for level. Then place the arch between the tops of the loomsides, unless the loom is a Draper, or any other loom with machined breast beam, in which case, according to William H. Chase, of Draper Corp., the breast beam should be mounted after the girts to insure a perfectly squared-up frame before any other part is added. If the job has been well done thus far, and the surfaces are machined, the arch should fit in snugly between the loomsides.

On old looms, however, where the surfaces are not machined, it may be necessary to resort to filing. The point to decide is whether to file the chipping

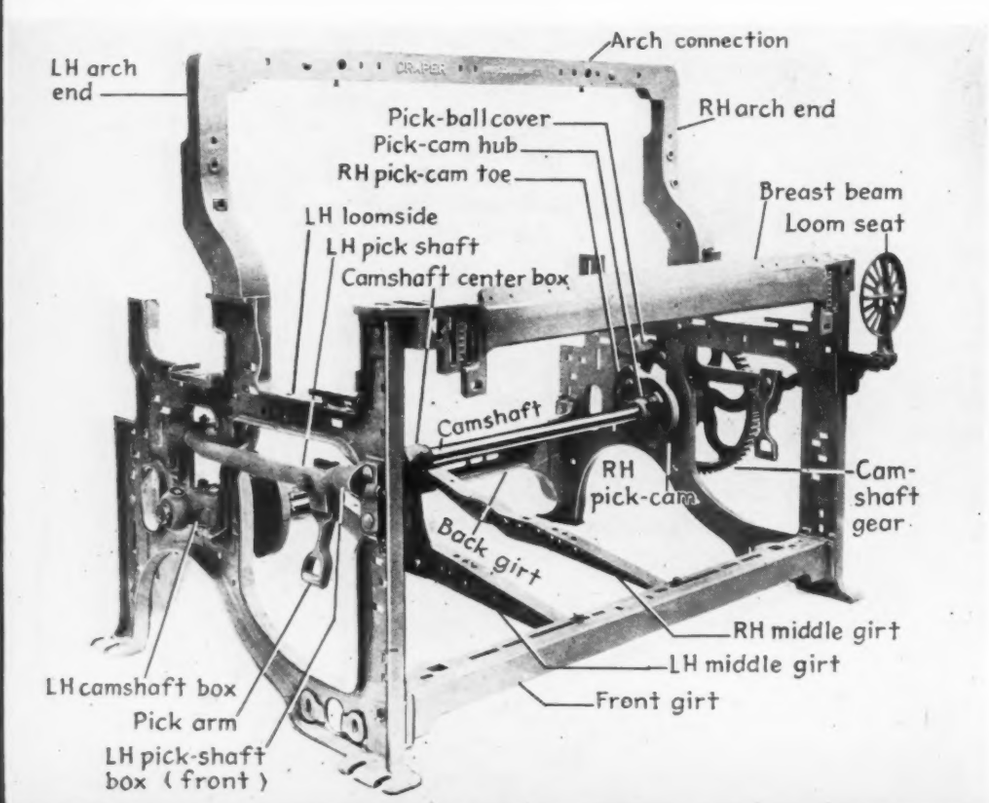


Fig. C1. Frame of Draper E Model cotton loom, plus camshaft and pick motion.

Copyright, 1932, Draper Corp., Hopedale, Mass.

bar on the girts or on the arch. If the arch is too long to go in between the loomsides without spreading them apart, the part to be filed can be determined by checking the loomsides for plumb. If they are in plumb, the point to file is the chipping bars on the ends of the arch; otherwise, the chipping bars on the girts should be filed. If, however, the arch is too short and, when bolted into place, would draw the tops of the loomsides together, there is no other choice but to file the chipping bars on the girts—squarely if the loomsides are in plumb, angularly if they are not.

Breast Beam and Drag Bars

Next, the breast beam, if it has not already been placed in position, should be so placed. It should fit snugly in between the loomsides. If the breast beam is located in recesses in the loomsides, it should be placed in position before the bolts in back and front girts are tightened up.

If the loom has drag bars, they should next be placed in position and bolted to the loomsides; but if there is a whip roll, it should be left out until later, as it may hinder somewhat the convenient mounting of other parts. The drag bars will, of course, also somewhat hinder access to other parts; but if they are fitted in between the loomsides, they should, nevertheless, be placed in position and tightened up along with the other parts of the framework.

Next come the cross girts to be bolted into position. If there is an auxiliary camshaft, the girts should be located so the center line of the cams will coincide with the center line of the loom. If there is no auxiliary camshaft, the location of the girts may be determined by dividing the back and front girts into four equal parts, if two cross girts are used, and locating the girts at the second and third division marks, or as near these marks as the construction of the loom will permit.

Inserting Shafts

This finishes the assembly of the framework, and the next thing to do is to place the three main shafts in their bearings.

The first shaft we place in the loom is the bottom shaft. If space permits and the bearings are plain, the shaft should be slid in through its bearings. If the shaft slides easily without requiring to be forced, the bearing is fairly accurately lined up and the shaft should turn very freely. Of course, as the shaft is slid through its bearings, the various cams, which are not split, should be slipped on the shaft. Recheck the shaft for level. The checking for free turning is, of course, done with all bolts and cap screws drawn up tightly.

The next shaft is the rocker shaft; and this should likewise be slid through the bearings and checked for level and free turning in the boxes. After the shaft is adjusted in level and turns freely in its bearings, the latter should be doweled, if this has not already been done.

The crankshaft is next in order. As this cannot be slid through the bearings, it is advisable to line up the bearings by using a straight shaft of the same diameter as the crankshaft. This is leveled and checked for free running in the bearings. Then the shaft is removed and all the bearing caps are taken off for the placing of the crankshaft. It is advisable to mark all the caps so they will not be turned around when replaced. Only one cap at a time should be tightened up, and the free running of the crankshaft should be checked after each cap is drawn tight. Thus, if a cap should "clamp" the shaft, it will be instantly detected and the fault can be immediately corrected. If all caps are tightened up before the free running of the shaft is checked, it is impossible to know which cap, if any, is binding the shaft.

On old looms in particular it often

Why We Are Publishing This Manual

THE SUCCESS of a weaving mill leans heavily on its loomfixers. Theirs is a highly skilled trade, calling for an extensive knowledge of mechanics in general and loom mechanisms in particular, plus familiarity with those relatively delicate textile materials which are dragged from the beam by the take-up, yanked apart by the harnesses, slammed from side to side by the picking mechanism, and hammered into their final resting places by the reed.

In normal times there is a constant procession of men passing in and out of the loomfixing trade. On one end are the experienced loomfixers who have reached the age of retirement or who are leaving to assume other positions. On the opposite end are the inexperienced men, mostly younger, entering the game to learn it from the old-timers and be prepared to fill the latters' places as needs arise.

During the depression this parade was interrupted. There were more than enough experienced men still active to fill the jobs available, and few novices came into the mills to learn the business and be prepared to carry on when times got better. To the surprise of many, times did get better, and still better, until the textile industry entered the present year with practically all looms again pounding fast and furiously. But the reserve of trained loomfixers? It was not there. It had not been built up.

Hence the industry has lately been faced with the necessity of training new men quickly and well. Many mills have established loomfixing schools. Mills, schools, and would-be loomfixers have beseiged TEXTILE WORLD *for printed instructions on how to adjust, maintain, and repair all varieties of loom.*

TEXTILE WORLD *has always made a specialty of publishing articles on loomfixing, but has usually restricted those articles to the finer points helpful to experienced men. Today the need is for information on the fundamentals as well as on the finer points; and therefore, in this issue, after months of preparation, we begin publication of an all-inclusive Loomfixers' Manual.*

Our consistent readers will not be surprised to find the authors of the cotton section, which begins in this issue, headed by Ivar Moberg, whose writings are widely recognized as the most authoritative and useful in their field; nor to find in later issues that the wool section is in the hands of Benjamin F. Hayes and the rayon-silk section is in the hands of John Picone, both likewise outstanding authorities in their respective branches of the industry.

The American loom builders—Crompton & Knowles Loom Works, Worcester, Mass., and Draper Corp., Hopedale, Mass.—are cooperating actively by supplying information, advice, and illustrations; and the industry, as well as TEXTILE WORLD, *owes them a sincere debt of gratitude for the time and effort they are thus expending for the improvement of textile-manufacturing efficiency. It must be remembered, however, that the loom builders are in no way responsible for, or necessarily in agreement with, all the statements made in this manual.*

Many special sections of the manual will be undertaken by other authors who are expert in the matters they discuss; and TEXTILE WORLD *herewith cordially invites readers to comment on, criticize, and supplement the discussions as they appear, in order that the complete manual may be as comprehensive, accurate, and understandable as it can be made.*

The manual is being published as it is written, month by month; and in order that there will be no delays in placing particularly important information at the service of the industry, no attempt is being made to adhere strictly to a logical sequence of subjects. Later, if there is a demand for a reprinting of the manual in book form, the whole work will be rearranged in logical order, revised, re-edited if necessary, and indexed to permit convenient reference.

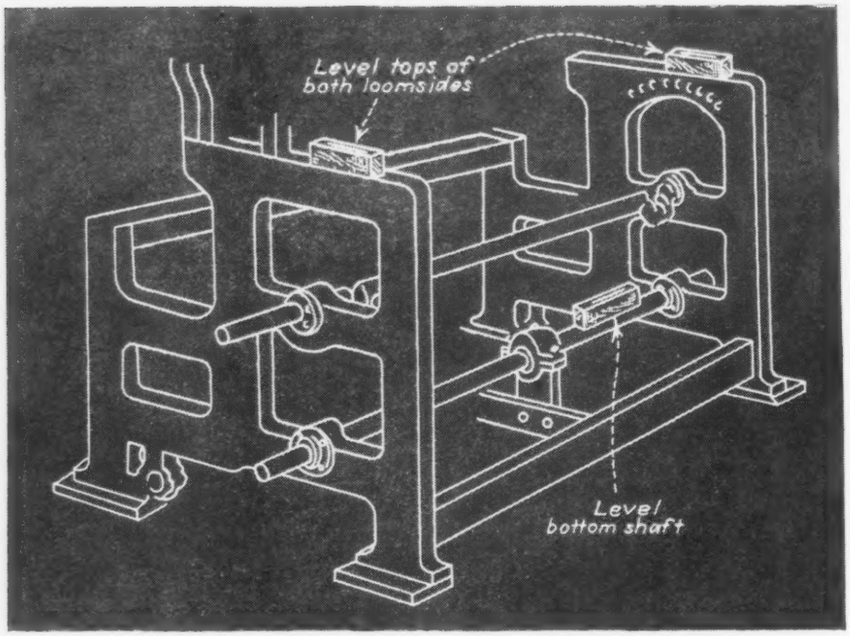


Fig. C2. Crompton & Knowles diagram illustrating leveling of frame.

happens that the bearings must be lined up to obtain a free-running shaft. In this case the chipping bars on the bearings should be filed carefully until the bearings line up perfectly. Under no circumstances should the bearings be shimmed into line. This is poor mechanics and gives the bearings a tendency to work loose; and when they are tightened up again, the shim may have dropped out. If the chipping bars are already filed so much that there is nothing more to file, which is frequently the case on very old looms, they should be built up by welding. It is very important that all points of the chipping bars contact the frame so that there will be no rocking of the bearings. If there is, it is almost impossible to keep the bearings tight.

Driving Gears

If the driving gears are not already on the crank- and camshafts, they must be so mounted at this time. This is a tedious and delicate job and requires great care if the mounting is to be lasting. In modern looms the driving gears are cut and the clearance between the tooth and the rim should be very small—approximately 1/20 of the circular pitch.

The modern cut gears on the looms of today are of the same type as in the automobile. The teeth in these cut gears differ from cast teeth and involute cut teeth in that they are cut to give a rolling motion between the teeth. The teeth are cut upon a gear-shaper where both the gear and the cutter revolve upon each other in the same manner that two gears act in the loom. Therefore, the teeth of two gears are always in contact and move in and out upon each other with the smoothness of two contact rollers. The proper mesh of these gears is obtained by gently pushing them together, but without any undue pressure that will make them bind. If any back-lash is allowed, they will wear out very rapidly. Mixing these gears with cast gears, or cut involute gears, is very poor mechanics and should not be resorted to. It is very important, and particularly emphasized by Draper Corp., that these gears should not be turned over upon each other without first receiving a coat of protecting lubricant film.

With cast gears a larger clearance must be given to allow for variation in depth of the teeth and also for variation in the pitch diameter. Turn the gears in mesh over by hand to see that they are not binding at any point, but do not have too much clearance. Gears are now made with three keyways, or with a loose hub, so that the worn teeth corresponding to the pick can be moved away from this point.

If the bore of the gears is slightly undersized so it will not go over the shafts, do not resort to filing either the bore or the shaft. No man can file either place so a perfect contact surface will result. It is therefore advisable to use a reamer to enlarge the bore sufficiently so it can be slipped over the shaft in a snug fit. The key-fitting is the most important job and must be done to perfection or the gears will come loose. It should be borne in mind that the driving gears of a loom are subjected to a terrific punishment by the distinct shock-loads at the pick and beat-up. Especially severe is the shock which the gears are subjected to at the pick.

Fitting the Keys

In fitting the keys, the proper key-stock should be used. Albert Palmer, of Crompton & Knowles, suggests a cold-drawn key stock with .60 to .70% carbon. The sides of the keys are first filed down to fit very snugly, but without pressure, in the keyways. The last operation is always "draw-filing" with a fine file. As soon as the correct width of the key is obtained, the filing down of the height should take place. In a closed keyway the key is filed seated in the keyway and the gear is tried from time to time to guard against over-filing. When the gear starts to slide up on the key, Prussian blue should be smeared on the top of the key and the gear forced up on the key as far as it will go. The gear is then removed, and the key is filed slightly where the gear has made the key bare. The key is then "draw-filed" on top and the sharp corners "deadened." Reapply Prussian blue and repeat the operation until the gear shows good contact all the way on top of the key. Then wipe off all the blue and apply a light coat of machine oil.

How far up on the key the gear should go before it is forced in position depends much upon how well it is fitted. The gear should be forced into position by pressure rather than by blows, and reversing the gear puller will in many cases serve the purpose of forcing the gear into position.

If new shafts, gears, and keys are purchased from the loom builders, but not assembled, the proper driving fit is made. Such gears should be forced upon the key without further fitting or filing, if a tight fit is to be secured.

If the keyway in the shaft is of the open type, the key is fitted into the gear instead of the gear being fitted on the key, as in closed keyways. Otherwise, the operation is similar.

The gears, as a rule, are keyed on the shaft by the loom builders, who are far better equipped to do this job properly than most of the mills. However, sometimes it is necessary for the loom-fixer to do this job, and it is to aid him in such cases that this subject has been elementarily discussed.[2]

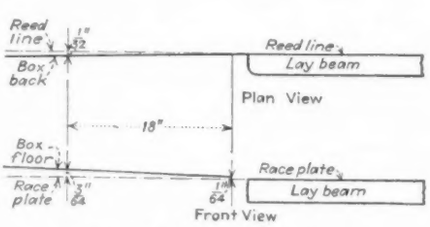


Fig. C3. Crompton & Knowles diagram showing desired pitch in shuttle box.

Next comes the mounting of the laysword on the rocker shaft. The lay should be squared off in relation to the upper machined part of the sword and checked for level. To square it off, use a 90° square and file the lay, if necessary, until it is square with the layswords. Connect the crankarms and see to it that the lay is parallel to the crankshaft. Adjust length of crankarms and height of lay in accordance with loom builder's gages or measurements for the particular loom in question. This is very important. Adjust the crankarm bearings so there will be no play, but see to it that they are not so tight that they will bind.

Now comes the job of lining up and squaring off the reed and shuttle boxes. Secure a reed of the exact size that is to be used later on in the loom. Place it in the reed grooves in the lay, and bolt on the reed cap. Using a 90° square, check the reed in relation to the race board. It may be necessary to file off the back of the reed cap where it contacts the laysword or, on old looms, to shim the lay cap by tacking on thin pieces of hard wood or cardboard.

After the reed has been squared off, a straightedge is used to check the lay ends to see that they are in the same plane as the race board. On old looms it is frequently found that the lay ends are somewhat elevated due to lint and dirt having worked their way underneath them. It is best to remove the lay ends completely and scrape away the lint and dirt collected. If, in the replacing of the lay ends after the dirt is scraped off, they are found to be too low, they should be elevated by means of thin cardboard placed under them in such a way that the wood screws go through the cardboard and prevent it from working out. The cardboard must be carefully fitted underneath the lay ends so the latter will not be sprung when the wood screws are tightened up. If the lay ends do not already have a flat-headed bolt going through them at the inner end, it is advisable to drill and countersink a hole for such a bolt. Wood screws do not seem to hold down the inner end very well.

Lining up the Box Backs

The next step is to line up the box backs. To do this, hold the box back firmly against the laysword and use the straightedge to see if the filing blocks on the back are high enough to be properly filed down. If they are not, build them up by welding. Do not shim the box back into position. The shims have a tendency to work loose and drop out, and the lining-up will have to be done all over again. First, file the filing block so that the box back is at right angles to the lay and so that it contacts on all filing blocks. Then tighten up the cap screw holding the box back to the laysword. Check with the straightedge the parallelism of the box back to the reed and file carefully either the two front or the two rear filing blocks, as the case may be, an equal amount until the box back lines up perfectly with the reed.

Most loom men line up the box back in perfect line with the reed. Crompton & Knowles recommends the correct pitch of the back line of the shuttle boxes to be such that a 48 in. straightedge held firmly against the box back will, at the opposite end, project $\frac{1}{16}$ in. into the reed line. See Fig. C3. The latest Draper box backs are in two parts joined together with a ball joint. This will insure a perfect lining up of the holes for the binder bolt without any disturbing of the perfect alignment of the box back with the reed when the binder bolt is tightened up.

It is well to check both the binders and the box front for being square with the lay ends. The writer's own personal opinion is that the binders, as well as the box fronts, if they are of the leather-covered type, should have an angle of slightly less than 90°. The reason for this is that the leather wears out faster at the top than at the bottom. If they are set at the correct angle of 90° at the start, the wearing down of the leather at the top will soon have increased this angle to 91 or 92°. As this will make the shuttle box wider at the top than at the bottom, there will be a tendency for it to force the shuttle to rise as it enters the box, resulting in a worn shuttle top and uncertain pick.

Next, mount the parallel motion on the rocker shaft and insert the picker stick. If the loom is a Draper loom with back binder, adjust the box front so that the point of the shuttle will strike the picker stick in the center, or a trifle to the rear. This point should be maintained during the full movement of the picker stick—and this will be the case if the alignment of the loom is correctly done. If the loom has front binders and the alignment is correct, the shuttle will strike in the center of the picker stick. However, since there is no adjustment in this case, it would perhaps be advisable first to line up the box backs so that the shuttle will center on the picker stick and then line up the reed with the box backs. This is contrary to the usual procedure, but the writer has on several occasions been forced to adopt this procedure in lining up old looms with front binders—and he has obtained good results.

In concluding this chapter, I wish to emphasize the necessity of a carefully done job of lining up the loom, for this is paramount to a well-running loom. Under no circumstances should any part be shimmed into correct position. This is poor mechanics and will cause trouble.

Footnotes

[1]Albert Palmer, of Crompton & Knowles Loom Works, believes it is always preferable to assemble the loom on skids; and he makes the following suggestions:

"Here at the loom works, with our new looms, the building of a frame is relatively simple because the loomsides and girts are machined thoroughly. Consequently, when the component parts of a frame are put in our large assembly fixture, they automatically form a frame that is completely level and square. With the older looms, however, in which there is very little machining, a mill has a real problem in assembling on a rough mill floor all the parts that constitute the frame.

"The first operation in assembling a frame is to provide a perfectly level surface upon which to do the work. I believe that the easiest thing for a mill to do is to obtain two timbers of approximately 4x4 cross-section and of a length slightly greater than the over-all width of the loom. These timbers can be spaced on the floor parallel to the shafting of the loom and at a distance one from the other such that the loomside feet will rest on the timbers. The timbers then can be leveled individually and with relation to each other.

"Having this base on which to start, the loomsides can be placed on the timbers standing vertically and spaced to the proper dimension between loomsides. This dimension can be determined from the lengthwise girts, which presumably have been machined to the correct length. These lengthwise members can be bolted in place temporarily to hold the loomsides in position."

[2]The loom builders are naturally more efficient than the mills in the matter of key-fitting, as their men have a better knowledge of the science of mechanics, are properly equipped for working with measurements of a few thousandths of an inch, and are dealing with all new parts. However, the following description of Crompton & Knowles' methods, kindly supplied by Mr. Palmer, should prove applicable to certain cases:

"We usually have a drive between the gear and the shaft of from .001 to .002 in. We also have a drive on the sides of the key amounting to .004 to .006 in. We never have the top of the key bear against the gear, with a drive fit.

"With the system of trying the gear on and off several times, we believe that the drive fit of the gear on the shaft would be destroyed.

"Our method for keying a gear in place is to put a dummy key in the shaft and then force the gear on the shaft, using a lubricant consisting of two parts of castor oil and one part of white lead. After the gear is in place, we measure the size of the keyway with a tapered key gage. The key is then draw filed to have .004 to .006 in. drive on the sides and no drive on the top. It is then given a coating of the lubricating mixture and is driven home.

"In the case of a staked key, we undercut the ends of the keyway with a cold chisel and then insert the key in this keyway. The key is slightly longer than the edges of the keyway and is put in place by bending the key in the middle. When the key is inserted in the keyway it is hammered down so that it is parallel with the shaft; thus the ends of the key are pushed under the undercut. The key is then staked in place by means of a cold chisel or a similar instrument which will compress the metal of the shaft along the joint between the key and the shaft, thus holding the key tightly in place.

"With the key in place, it is filed to fit the keyway in the gear. This can be done through measurements taken with calipers and a tapered key gage. Here again, the key should have a drive of .004 to .006 in. on the sides and no drive on the top. After this fitting operation, the gear can be pressed on, using the lubricant heretofore mentioned."

Mills do not discard an old shaft because the keyway is a little enlarged through wear from loose keys. In such cases a side drive of the key cannot very well be used, unless the keyways in the shaft and gear are remilled to the same width. Few, if any, mills would go to this expense, and the common practice is to make a key that will fit as snugly as possible in the sides of the keyways and will be high enough so that it will "draw" the bore of the gear tightly up against the shaft and thus hold the gear securely by friction.

Roadside venders of candlewick products sell in season 15 to 20 spreads a day to tourists at prices averaging from $3 to $10 per spread.

Bedspreads in the Breeze

represent $5,000,000 annually to candlewick manufacturers

HUNDREDS of flapping bedspreads in kaleidoscopic designs and colors dazzle the eye of the tourist traveling from Atlanta, Ga., to Chattanooga, Tenn., by way of Dalton, Ga. The tourist may not know it, but he is traveling through the heart of the candlewick industry, one of the newest—and yet basically one of the oldest—branches of textile manufacture in the United States. There is much more behind the scenes than can be viewed from the road.

A $5,000,000 Industry

Not so many years ago, candlewick bedspreads and other products were unknown except in certain mountain communities of the South and in museums of early Colonial art. Last year, the majority of bedspreads sold in department stores were candlewick, the average spread bringing from $3 to $15, and on rare occasions as much as $45. It has been estimated that the total volume of business amounted to from $4,000,000 to $5,000,000. Of course this is not such big money when one considers that a number of single textile companies do many times this volume annually. However, there are two rather remarkable factors in candlewicks. In the first place, their manufacture is carried out largely in the home by hand, and is one of the few surviving "fireside industries" in the United States. Second, although commercial production began about 25 years ago, the greatest growth took place during the last five to ten years, which means that the industry had its greatest development during and immediately after the depression.

There are about 35 companies in the Dalton area operating commercially. These employ approximately 1,000 persons in the factories and 10,000 persons in their own homes. Last year, it is estimated that through the factories 7,000,000 yd. of wide sheeting and 2,000,000 lb. of yarn went into some 2,000,000 spreads which were shipped to all parts of the United States and to many foreign countries. The sheeting used is 64x64s and 64x60s, and the yarn is mostly 8s (12- or 16-ply) for handwork and 10s (10-ply for chenille and 2- or 4-ply for needlepunch) for machine work. Sheeting and yarn going into colored spreads are pre-dyed with vat colors since fastness is one of the chief requisites of a good spread. Most of the raw materials are bought from Georgia mills, and most of the dyeing is done in Dalton and Chattanooga. The volume of basic materials used by the candlewick industry is not yet large, but it is significant in that other craft industries of a similar nature could be developed with impressive totals.

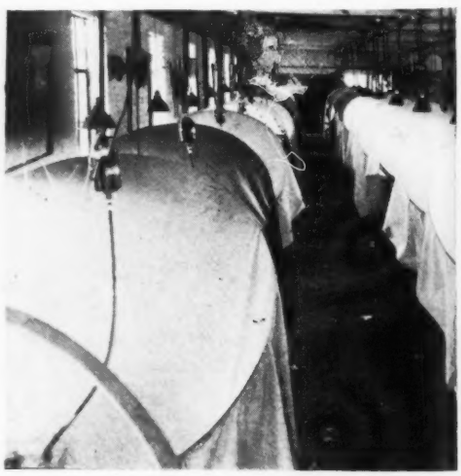
The history and development of the candlewick industry is a fascinating story in itself. There is considerable controversy as to who is responsible for its beginning, but consensus around Dalton is that Mrs. Catherine Evans Whitener revived the art which grew into an industry as it is today. In 1892, as a girl of twelve years, she noticed in the home of a relative an old bedspread which had been handed down for generations. Impressed with its beauty, she determined to make one like it, and succeeded in 1895. Later she made other spreads, and a neighbor, liking one, offered to buy it. Mrs. Whitener's first sale was made some 38 years ago. As demand increased, she overcame manufacturing difficulties which greatly curtailed her early production, and it was not long before she was forced to enlist helpers. Seeing the need for colored designs, Mrs. Whitener made an arrangement with Franklin Process Co. to supply colored yarn fast to light and washing. Today this company is still furnishing much of the colored yarn used in candlewicks.

Mrs. Whitener's first spread was the revival of an art which goes back much farther than any one at Dalton can remember. Historians think the first candlewick spreads were made about 1650 by New England settlers who gradually turned homespun coverlets, mended with pieces of cotton from the wicks of candles or strings from fish nets, into decorative embroidery work. Tufting developed along with Colonial culture, and by Revolutionary time, beautiful candlewick coverlets graced the finest mansions. The art was developed to its highest from 1750 to 1825, after which it was almost completely lost until the end of the century. There was a revival of the Colonial-type work from 1915 to 1930, followed by a cheapening and decline until 1934. Finally came the third revival which is at its height now, featured by adaptation of the old embroidery arts to modern fashions, colors and fabrics, and by a revival of the intricate and expensive needlepunch work.

As mentioned previously, 10,000 of the estimated 11,000 persons employed in the industry, work in their homes. They sell their labor to the organized companies which purchase and distribute the raw material, mark the designs, collect the finished spreads, and—most important of all—market them. The spreads sold along the road are relatively few in comparison with the thousands shipped weekly from the factories to department stores and other outlets.

Handmade Spreads

One of the more important companies dealing exclusively in handmade work



In the needlepunch department of Cab embroiderers who are now applying freehand and similar to hand embro drives the embroidering needle throug thousands of times faster than it coul the embroidery hoops are made from

is R. M. Herron Co., founded in 1921 by Mrs. R. M. Herron. From a modest beginning, the organization has grown into probably the largest firm in Dalton handling high-grade handmade goods exclusively. The heart of the business is in the back yard of Mrs. Herron's spacious old-fashioned home where a wooden building serves as store house, design studio, finishing room, shipping department, etc. In addition, it has its own laundry. The Herron company employs only 42 persons on its properties—yet the books show over 700 persons on the payroll who work regularly in their own homes. This firm buys its wide sheeting, lays out the designs, designates the price the tufting is to bring, and turns the raw material over to a "hauler." The "hauler" lives in an isolated rural community and serves as intermediary between the workers who live there and the company. A week or two later he returns the tufted spreads to the company. They are then laundered, finished and shipped. The finishing approximates methods in use 200 years ago. The spreads are rubbed with an old-fashioned cotton card which pulls off lint and fluffs the tufts. Fluffing is completed by beating the spread with a stick and letting it hang in the cool dry air. Final treatment is trimming each tuft with scissors by hand.

Machine-made Spreads

An outstanding firm in Dalton which has applied modern mechanization and industrial principles to production of candlewick spreads is Cabin Crafts, of which F. R. Westcott is president. Like the Herron company, this firm specializes in high-grade goods. Although Cabin Crafts turns out thousands of machine-made spreads every week, a major part of its business is still production of spreads made completely by hand in the homes of workers. The company has two branch plants which handle nothing but high-grade handmade spreads.

All patterns are designed for Cabin Crafts by an expert stylist, Anne Orr, needlework editor of *Good Housekeeping,* who has applied modern trends to classic candlewick and needlepunch tufting. The first step in manufacture is to reproduce the design on the sheeting by rubbing a block of colored wax over the sheet which is stretched tightly over a raised pattern. It then goes either to the chenille or needlepunch department, depending on the type of work desired. The chenille department is equipped with a special sewing machine which puts in the tufts and cuts the loops at a rate of 1,500 to 2,000 stitches a minute. The machines contain from one to three needles each and are used primarily for tufting in straight lines. Sheeting going into the needlepunch department is stretched over large hoops which look like giant embroidering frames. Skilled operators fill in the designs with a small machine about the size of an automatic pistol attached to a flexible shaft, and so arranged that hundreds of stitches a minute are put in the cloth in exactly the same manner that the ancestors of the operators pushed a needle through by hand. Sometimes chenille and needlepunch are combined in the same spread, and it is not uncommon to mix handwork in with either or both. After tufting is completed, the spreads are finished by hand, laundered, inspected and shipped. Cabin Crafts has its own staff of salesmen calling on the trade regularly, but most of the smaller companies depend entirely on jobbers to distribute their outputs.

Four generations of one family at work on the spreads. Under NRA standards, these workers could make 25c an hour in their spare time . . . now they are lucky to make 10c an hour.

in Crafts, all operators are expert hand their skill mechanically. All work is idery except that a patented vibrator h the cloth by electric impulse many d ever be done by hand. Note that wagon wheels.

Workers in the better plants are paid about the same that ordinary textile labor receives anywhere in the South. The workers in the homes, however, are not so well off. Under NRA standards, tufters were paid 6c. and 8c. per oz. of embroidery for 60-square and 64-square sheets, respectively, which meant that they could earn from 15 to 25c. an hour. After collapse of NRA, established rates went to pot, and each dealer now bargains through his driver on every order. Today, some work brings only 3 or 4c. an oz. which means that the income of the workers is pitifully small. Fortunately, however, there are some high-minded employers in the industry who are doing what they can to keep wages at a reasonable level despite chiseling by competitors.

Proud of her handicraft!

Those companies paying higher wages naturally get the cream of the workers, which, to some extent, offsets the competitive disadvantage of wage chiseling, as the skill shows in the quality of the goods. Cheap work, which some tufters are forced to take because of economic pressure, is always left until last if a better grade of work is available.

Future of Industry

The candlewick industry has had a remarkable growth in the last few years and is still growing. In the beginning, most of the work was carried out by a few companies within a radius of 25 miles of Dalton. But as demand increased, the radius was expanded to 100 miles. This territory has about reached its capacity in the manufacture of handmade spreads. However, if demand for candlewicks continues, it is inevitable that other centers will be developed.

The candlewick bedspread seems to have passed from a fad to acceptance as a special type of coverlet appreciated for its particular beauty, durability and usefulness. Manufacture is slowly getting beyond the craft stage, but it will probably remain a hand industry despite the tendency toward partial mechanization. The machines, such as are in use, are each one guided by the skilled hand of a worker, and if this human touch is removed, the candlewick spread will become just another bedspread without character.

New ideas in design, construction and merchandising on the part of its leaders, plus a sincere effort to raise wages and social standards of the workers, will undoubtedly go a long way toward keeping the industry on a high plane and insuring its future as an integral part of textiles.

Covering the Waterfront

What experiences in the 1937 woven bathing suit trade promise for the 1938 season

By Eleanor Weaver

THE demand for cotton- and synthetic-yarn woven bathing suits during the season of 1937 makes them a substantial item for 1938. The consumer has found them attractive as to colorfulness and variety of pattern. The price range includes more potential customers because it reaches a popular lower level, and since the linings may be knitted cotton, acetate, or wool, any taste is satisfied as to warmth or coolness on the beach. Another attractive selling point for this type of suit is that it requires very little upkeep, because soap and water will make an easy task of it for the busy woman.

Any number of cotton materials are used for bathing suits, and almost all of them are printed on a variety of rough-looking weaves. This gives the suit a naturally uneven appearance that prevents a mussy, wrinkled condition from showing up. The weaves include narrow-wale piqué, slubs large and small, seersucker as wide as $\frac{3}{8}$ in. per stripe, cloques in checks and ovals, and other stripes and odd patterns with a raised effect. Those bathing suits which are made of plain or smooth cotton are printed with splashy florals or batik-like designs, giving much the same effect as prints over weaves in camouflaging wrinkles.

Spun rayon is not seen very much as yet, but in so far as it takes bright and off shades brilliantly and has a warmish feel, it offers a possibility for bathing suits. Most spun-rayon prints are the same sort of spaced, casual floral. Lastex has been printed with one dark color or been brocaded in large florals. This material is effective in itself and needs little decoration. Acetate belongs in a higher-priced group than most cottons and is coming forth in very gay colors, predominantly on white grounds. The chaulky white of acetate is a fine print background and flattering to the wearer.

The variety of designs on these various materials is astounding. There's a print to meet any desire, and as many color combinations. Nauticals are still good, although this season's wild florals have been favored. The very newest thing is native effects—as though the material has been hand printed in an artfully careless manner. As noted before, navies can go on plain weaves, but they are most effective when the cloth is not too smooth. As to color, the white background, chaulky tones, dark or bright on white or vice versa, and vivid combinations are outstanding.

The only instances, which are very few and in a higher price range, where dyed yarns are used instead of prints are in ginghams and plaid seersuckers. Even most of the striped goods are printed rather than woven, so that we can safely say that we are in a print era and will have to limit our concern with weaves to those for printing purposes. After all, the present trend to gaity is best met in this way, since it would be a difficult task to make weaves equally as bright and attractive in price range.

Dyes naturally are very important since they must have several dependable characteristics. The printed bathing suit is exposed to salt water and damp sea air and to brilliant sunlight for hours on end; and there must be a minimum of streaking from running or fading, no matter what the color. The care being used is demonstrated in the popularity of today's suits.

On considering the large volume of suits of this kind, it seems wise to think ahead a little and plan to spend some time on originating new possibities for the stimulation of this market. To put it tritely but truly, fashion is fickle and requires new prints and new styling to preserve a trend for a reasonable length of time; and mills must cast about for anything slightly different in weaves, even if only for backgrounds. Combinations of two different yarns is a good field for trial; inquiry on men's swimming shorts shows a belief in their growing popularity there.

Construction varies a good deal. It is generally looser as the price range comes down, but there are also instances of the print influencing price instead when the design is unusual. Most of the materials are light in weight, because even medium weights would have to be lined, and some, as seersucker, are often almost sheer.

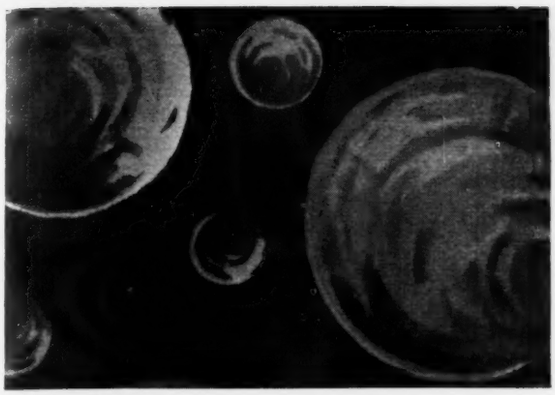
Since men are not wearing tops wherever they can eliminate them, trunks or shorts are actually the masculine bathing suit. The development of using woven materials for this purpose is getting past the introductory stage and cannot be overlooked. One of the best reasons for interest in this matter is that at least three kinds of imported materials are bidding for a good share of the masculine-fashion limelight on our beaches.

The most important of these imports is India madras, which is expected to be a style highlight for the next season in many men's accessories. This brightly colored cloth is made by hand in a variety of plaids, checks, and tartans. It is yarn-dyed, plain-woven cotton of medium-count yarn and has a rough, sturdy feel as though unfinished. Vegetable dyes are used, with rice water for sizing.

The other two imports frequently seen in shorts are notable largely for their hand-printed designs—large geometricals or conventional florals in one color on natural or white. Tapa is a native cloth made of fibers from the bark of trees, and Java cloth is woven plain from coarse linen or cotton yarn. These have an even rougher feel than the India madras.

Woven woolen fabrics in solid colors are very popular, and a number of combinations have been made up for swimming trunks. In the field of wool we have flannel and wool gabardine. Prominent combinations are mixtures of worsted and acetate and silk and cotton, showing that experimentation in this line would be a progressive step and could produce any amount of good results with a little testing. Perhaps some of these "masculine" fabrics should be applied to the feminine side of the picture, as men aren't the only ones who like to keep warm at the beach and since gabardine, for instance, is now a favorite in women's wear.

Narrow-wale cotton pique, 116 x 74 finished, white on dark or bright colors.



Albert H. Vandam Co.

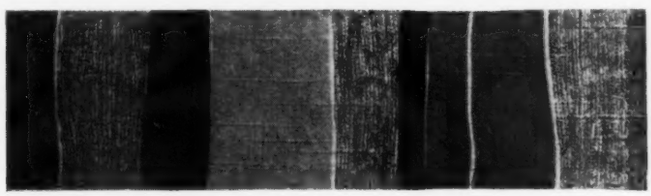
At left—Cotton broadcloth, 104 x 56 finished, photographic print with dark ground. (3/5s size.)

At right — Cotton broadcloth, 74 x 70 finished, batik effect in native shades. (1/5 size.)

Albert H. Vandam Co.

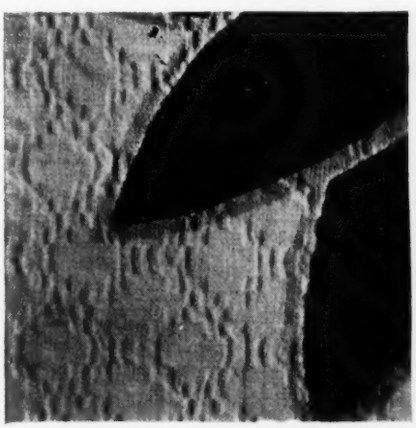
Albert H. Vandam Co.

Cotton slub broadcloth, 136 x 62 finished bright and black photographic geometrical on white. (3/5s size.)



Albert H. Vandam Co.

Cotton slub broadcloth, 132 x 64 finished, bright and dark stripe variation. (3/5s size.)

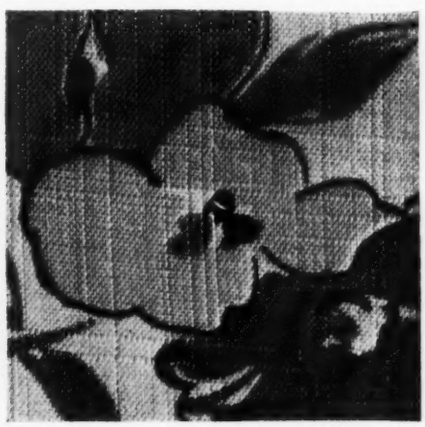


J. P. Stevens & Co.

Cotton cloque piqué 140 x 88 unfinished, large-spaced conventional floral on white.

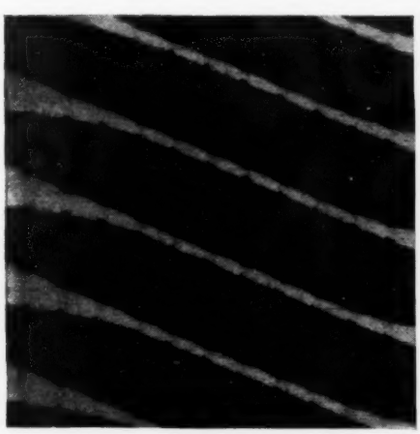
J. P. Stevens & Co.

Cotton dobby fancy, 116 x 84 unfinished, vibrant off-shades, splashy floral pattern.



J. P. Stevens & Co.

Spun-rayon slub, 56 x 48 unfinished, clear bright colors and navy on white, medium-size all-over.



Satin-stripe sheer cotton, 103 x 78 finished, bright color on white, chevron print. When this fabric is made up warpwise, an unusual striped effect is obtained.

Heavily backed cotton cloque, 106 x 80 finished, bright red and white on navy, fairly large scattered print.

Cotton cloque in all-over check, 140 x 100, very brilliant colors on white.

COVERING THE WATERFRONT

TWOC in the South . . .

A reporter's summary of results of first half-year of the drive

By special correspondence

A CRITICAL stage has approached in the southern unionization move of the Textile Workers Organizing Committee. As this CIO drive nears the half-year mark, the job of signing up employees—the union's major task thus far—is becoming subordinate to that of signing up millmen themselves. It is claimed 100,000 of the 350,000 textile workers in the South have already accepted union membership and authorized the TWOC to act "as a collective bargaining agency in all matters pertaining to rates of pay, wages, hours of employment, or other conditions of employment." These operatives do not pay dues until agreements have been signed. Now the union must deliver those agreements—negotiated, signed and sealed.

To date the union has secured signatures on only 16 agreements covering 17,500 employees in southern mills. Management is wondering whether this is not evidence that the union campaign has bogged down. Compared with pacts covering some 422 firms including 145,000 employees in the whole textile field, the showing in the South is poor. [Inclusive of hosiery, the union now claims 200,000 employees, or one-sixth of the industry's 1,225,000 workers under signed pacts.] Furthermore, when one considers that the bulk of the cotton mills are in the South, and out of a total of 119 contracts signed in the last two months, only 15 were in the cotton division, and only four of these in the South, the showing is even poorer. But management must be on guard lest over-optimism hide from it these facts:

However slow the southern drive appears to employers, it has apparently satisfied union leaders, who say they have made excellent progress, considering previous union defeats in the South. The union's strategy has been to work slowly, to obtain signatures from the majority of a mill's workers, then to seek a collective bargaining pact, pointing to the National Labor Relations Act as giving the union the right to represent employees when it has signed 51% of them. The TWOC now claims majorities in over 100 southern plants. Negotiations are in process and pacts for discussion are being drawn. The southern drive may rise or fall on the response of these hundred employers.

Pro-Employer Factors

Many factors which will have a determining influence on the union's fight to win contracts have already appeared on the scene. Among factors favorable to employers are these:

1. Public opinion is being molded against industrial disturbances. Citizens' Councils for Industrial Peace have been formed in two Tennessee cities, with the intention of promoting fair wage-hour conditions and of smoothing out employer-employee relations. Chambers of commerce in many southern towns have placed full-page advertisements in local papers explaining the Wagner Act and showing that the closed shop is not demanded by law. The violence of the Republic steel strike has brought condemnation from ministers and civic leaders, and strong editorials in the press warning against such action in the South.

2. The employees themselves are still an unknown quantity in many instances. Independent unions have been formed to oppose CIO. A number of good-will groups have been outlawed as company unions in violation of the Wagner Act, but others are reforming and incorporating so as to obtain collective bargaining privileges.

THE AUTHOR of this article — a daily newspaper man — recently made a trip through southern textile centers to study CIO progress. This summarizes his impressions, which are intended to be reportorial, and not editorial, in character.

Then there is the American Federation of Labor. Mill-men and A. F. of L. men in the South already have one idea in common: Neither of them believe that textile employees will ever *stay* organized. TWOC leaders say they have a second thought in common: Recognition of each by the other to the mutual exclusion of CIO. Labor Board officials dread the day when they may have to decide whether or not the A. F. of L. is acting as a company union in a tense local situation. A. F. of L. activities to date have been practically nil. The A. F. of L. has no money for organizing, nor has it made much progress among the workers. George Googe, heading the A. F. of L.'s southern textile drive, bemoans the fact that CIO took away all the experienced organizers. He expects TWOC to discredit itself, after which he can step in, first with the large mills, and sign up employers, who he feels will deal with him gladly as the "lesser of two evils." Mr. Googe forgets that local labor men upon whom he is depending, either have no heart in the fight on CIO or do not believe textile workers can be organized.

3. Employers in the Piedmont area can threaten and can carry out a threat to move to the deep South, where modern machinery may be installed, and where labor and tax costs are lower. The Cotton Manufacturers' Association of Georgia is again running its advertising campaign under the head "Let's Keep the Cotton-Mills in Georgia!"

Pro-Union Factors

These factors favor the CIO:

1. Employees dislike the A. F. of L. for past defeats, and are flocking to CIO because they feel it has money and man power enough to win agreements. The A. F. of L's state federations of labor are split seriously, with the presidents of two of them, as well as officials in various affiliated bodies, not only fraternizing with the TWOC enemy, but leading them in battle.

2. Fostered by the Federal Government, public sentiment generally favors collective bargaining. Direct Government action through Regional Labor Boards aids CIO, to wit: TWOC has won the first two N.L.R.B. elections in the South by 60–40 majorities. In cases affecting over 120 individual employees, the Board has forced reinstatements and payment of back wages in excess of $50,000. In these, and other instances, Labor Board is benefiting the union.

3. TWOC leaders and their terms are, on the whole, reasonable. Negotiated pacts have brought wage rises of 5 to 10%, the 40-hour week, (44-hours for maintenance men), overtime pay, seniority rights, equal distribution of work, arbitration to adjust disputes, discipline against union members violating the pact, provision for engineers to settle work-load controversies, union promise of aid on tariff and other legislation benefiting the industry, and usually, provision for "majority shop."

Those, in brief, are the advantages on both sides.

TWOC officials recognize that southern labor must be educated to unionism. They know that they are in for a long pull—two years at least. But—according to present opinion among mill executives, employees, financial circles, Government officials and the community at large, the months ahead will not be as peaceful as heretofore. There will be no general strike in the South, unless all union strategy fails, but this fall and next spring there may be a large number of strikes called against groups of mills and the larger independent units.

Taylor Hails Agreement as Assuring Harmony

By GEORGE W. TAYLOR,

Impartial Chairman, National Labor Agreement in the Full-Fashioned Hosiery Industry

WITH the renewal of the National Labor Agreement in the full-fashioned hosiery industry there comes a definite assurance that there will be no interruption of work in signatory plants during the coming year. The significance of this type of agreement is not fully recognized since interest in the labor relations of the full-fashioned hosiery industry is often confined to the clashes and the turmoil that occur too frequently. Those mills which support the National Agreement have been singularly free from strikes since the inception of this agreement idea in 1928.

Through the decisions of the Impartial Chairman a body of industrial common law has been created to define the rights and obligations of each party to the agreement. In no instance has either party failed to accept the full responsibilities required by a decision. The National Labor Agreement is of interest, therefore, not only to the hosiery industry, but in pointing a way by which a civilized plan of industrial relations can be developed under the labor agreements that are now being consummated so generally throughout American industry.

Hosiery Pact Revived . . .

New agreement in unionized branch seen as aid to stability

PROSPECTS for harmonious labor relations in the full-fashioned branch of the hosiery industry were appreciably strengthened this month, as result of the signing of a new contract between the Full-Fashioned Hosiery Manufacturers of America, representing unionized mills, and the American Federation of Hosiery Workers, representing unionized employees. The contract which was signed July 15, became effective Aug. 1, and covers nearly 50 plants. Indirectly it will affect a number of other full-fashioned mills having special individual agreements with the union.

As noted briefly in TEXTILE WORLD last month, the contract provides for an average wage advance of about 12½% and for the reappointment of Dr. George W. Taylor, of the University of Pennsylvania, as Impartial Chairman. News of the signing was welcomed in the market this month as a constructive step which would help toward labor stability in the industry. Probably the most significant aspect of the wage increase, from the point of view of increased manufacturing costs, is the substantial raises made in rates paid workers in the service weight division. The basic increase provided in the contract is 6%, this being raised to 12½% by the higher advances made in service weight rates. It is estimated that the wage revision will add about $5,000,000 annually to the payroll of the mills affected. Trade authorities calculate that this added costs burden will necessitate hosiery price advances of from 15c to 22c per doz.

Signing of the contract marks the re-establishment of the National Agreement which had operated very successfully between unionized mills and the union for a number of years. Indeed, the annual accord had come to be regarded as a pioneer accomplishment in industry-labor contracts. The last agreement expired in the fall of 1936 and was not renewed. With the aim of eliminating the labor uncertainty which resulted during ensuing months, negotiations were opened last Spring, and these culminated in the signing of the new contract.

The official text of the agreement has not been made public. However, the National Association of Hosiery Manufacturer has published in its *News Letter,* a digest of the provisions which the contract is understood to contain. According to this unofficial digest, the agreement comprises nine major clauses, abstracted as follows: (a) Dr. Geo. W. Taylor will act as Impartial Chairman; (b) Basic rates on piece rate operations, other than 51 gage, will be raised 6%, 51 gage being raised 3%; (c) 6% raise for weekly rate basis production workers; (d) 6% basic raise plus addition of 1c. per doz. on Proctor & Schwartz boarding machines; (e) weekly hours per shift on double shift operations, except in the legging department, are reduced to 36 hr., with a double shift bonus of 11.11% added; various boarding and finishing exceptions to these hours are included; (f) piece rates on 6-thread and heavier are increased by an amount equivalent to two-thirds of present differential between such operations and 5-thread operation rates; (g) Dyehouse workers rates raised to 68½ to 80c per hr. on 40-hr. week of 8 hr. daily, with various tolerances provided; (h) general utility workers get minimum pay of $15 per 40-hr. week, all to receive 6% increase; (i) shipping and stockroom workers get 6% increase and 40-hr. week, with varying hours for departments in various mills, contingent upon whether such departments are organized.

Mill Village Sold to employees of Whitney Mfg. Co.

From TEXTILE WORLD'S Southern Office

EMPLOYEES of Whitney (S.C.) Mfg. Co. recently completed negotiations with the mill which made them owners of all the houses in the village. This is one of the first complete village sales recorded in the South—although a number of other mills have been playing with the idea for some time, and at least one other large group has taken definite steps in this direction. Observers are of the opinion that the Whitney deal, if it works out as anticipated, may be a model for future sales of southern villages to employees. This view is based on the fact that progressive southern management is beginning to take an entirely different attitude toward employee relations as compared with that of several years ago. The trend is definitely away from any paternalistic assistance, such as the village system. Developments which led up to the sale of the Whitney village began to take form about a year ago. First, some of the villagers made known that they would like to own the houses in which they lived. This plan was agreeable to the mill if suitable arrangements could be worked out. An investigation was made with the assistance of a local realtor, and a plan for handling the property formulated.

The Whitney village was built about 10 years ago at a cost of $350,000, and consists of 140 houses of varying sizes, each equipped with modern lighting, water and sanitation systems. The houses were appraised by the realtor on two bases: what the mill felt it had to realize from the property, and what the employee could pay without being burdened.

The mill decided that it would be satisfied with an average price of $1,000 per house. At the same time, it was found that the employees, without inconvenience, could pay about twice the usual monthly rental. This amounts to around $1 per month for each $100 evaluation. That is, a $1,000 house would be paid for at $10 monthly, an $800 house $8 monthly, and so on. During the purchase period, an interest rate of 3% is charged on the unpaid balance. The houses brought from $700 to $1,500 each.

Title to the property is given to the purchaser after he has made a down payment of 10%, paid in either a lump sum or in monthly installments. The regular rent was stopped as soon as an employee signified his intention of buying. It is estimated that the houses will be completely paid for within a period of nine to ten years. Legal costs were paid by the mill, and the realtor who handled the transfers received a commission.

The village is not incorporated, and the mill will continue to own and keep up streets, sewer lines, light lines, water lines, etc. Maintenance beyond this will depend on each property owner. Incidentally, several of the new owners have already painted their houses and started improvements in the yards.

The management said that this sale was only for the purpose of giving the employees a feeling of greater independence, and not from any profit motive. When questioned as to what savings the mill might expect as a result of removing the burden of carrying the village, the answer was, "We cannot tell about that until the property is all paid for and our books clear; and, at the earliest, this will be over nine years from now."

125 Years — Clark Thread Co. celebrates an anniversary

THE 125th anniversary of the Clark thread business was observed on July 23 by a testimonial dinner at the Montclair (N.J.) Golf Club tendered by his associates to John B. Clark, president of the Clark Thread Co., Newark, N. J. There were in attendance many officials and employees, several of whom had served the company 40 years or more. The name W. H. Loftus, vice-president, who has a record of 54 years continuous service, headed the list of guests. Sales managers and district superintendents from all over the United States were present. A historical address was given at the conclusion of the dinner following which Mr. Clark replied with brief references to past and present problems of the thread industry.

The first plant for the production of cotton thread was erected by J. & J. Clark in Paisley, Scotland, in 1812 and for many years that firm exported its thread to the United States and to other countries. That was the second generation of Clarks in the thread business, the first generation in the person of James Clark having been a maker of linen thread in 1784. The business in this country was greatly extended by two members of the third generation, George A. Clark and his brother William Clark.

John B. Clark

In 1864 members of the Clark family purchased the Passaic (N.J.) Thread Works, which formed the nucleus of the Clark Thread Co., organized and incorporated in 1865. Then manufacture of Clark's thread began at Newark and its importation discontinued. Sewing machines were becoming more and more popular and as they required thread of a softer finish than had previously been used for hand sewing, the Clark Thread Co. made up a six-cord thread suitable for both hand and machine use. This thread was called "Clark's Our New Thread," but after marketing the article under this name for a few years, a member of the Clark family conceived the happy idea of abbreviating the last three words to "O.N.T.", and thus was coined the trademark which today is familiar to many millions.

Demand for O.N.T. grew steadily, making it necessary to expand the plant and to increase the number of employees. For a number of years the Clark Thread Co. was the largest individual employer in the Newark area, having on its roll more than 5,000 workers. This record was reached in 1923 during the management of John William Clark (1867-1928). During his regime the Clark Mill-End Spool Cotton Co., East Newark, was merged with the Clark Thread Co., the combined plants covering acres of ground and having more floor space than any other business in Newark.

In the post-war period the fifth generation of Clark's, in the person of John B. Clark, prepared by years of training and experience, took over the reins of management of the business. Since the death of John William Clark in 1928, John B. Clark has so consistently carried forward the tradition of his ancestors that his associates arranged in his honor the testimonial dinner held to celebrate the 125th anniversary of the Clark family in the cotton thread business.

Robert R. West, chairman of program committee

Industrial Relations

Discussed at Blue Ridge conference —McGrady supplies the fireworks

Luther H. Hodges, who presided at a session

TEXTILE executives played an important part in the Southern Conference on Human Relations in Industry held at Blue Ridge, N.C., July 15 to 17. Robert R. West, president of Riverside & Dan River Cotton Mills, Danville, Va., was chairman of the program committee; Luther H. Hodges, production manager, Marshall Field & Co., Spray, N. C., presided at one of the sessions, as did also T. M. Forbes, secretary of the Cotton Manufacturers Association of Georgia; and the speakers included Glenn Gardiner, assistant to the president, Forstmann Woolen Co., Passaic, N. J., and H. Gordon Smith, general manager tire cord department, U. S. Rubber Products, Inc., Hogansville, Ga.

Fireworks were furnished by Edward W. McGrady, Assistant Secretary of Labor. In his usual blunt way, Mr. McGrady indicated that industry-wide collective-bargaining agreements such as those sought by CIO were more satisfactory arrangements for the mass-production industries than are the craft and individual demands of A. F. of L.

"Long ago I convinced myself," he stated, "and I leave the thought with you for further exploration—that instead of negotiating contracts covering wages and hours within the great mass-production industries by separate companies or by individual plants, that it should be done on an industrial basis, that is, every company within that industry would agree to negotiate as an industry for all its labor."

The speaker added, however, that organized labor "must create discipline among its members and maintain observance at all times of the sacredness of contracts, efficiency in production, and cooperation in the elimination of waste."

The conference had the best attendance it has had for years, bringing together 365 representatives of southern industry from 114 plants located in 10 States. Also, 125 represenatives attended the southern industrial executives conference at Ashville immediately preceding the Blue Ridge meeting.

Differentiating between the tools and the fundamentals of industrial relations, Mr. Smith listed the following nine fundamentals:

1. Pay the highest practical wages.
2. A full day's work for a full day's pay.
3. Adequate attention to selection and training.
4. Avoid unsound concessions.
5. Develop employees' self-respect.
6. Management must manage.
7. Avoid a high-hat attitude.
8. Protect and promote safety.
9. Be absolutely fair.

The Foreman's Part

The foreman in an industrial plant has three functions in connection with industrial relations, stated Mr. Gardiner: (1) he must be definitely personnel-minded; (2) he must be community-minded; (3) he must interpret sound and instructive facts about business to his men. To help develop the right type of men for this job, said Mr. Gardiner, we must:

1. Think of the foreman and train him as a salesman of the company and its policies.
2. Fit this training program to the various types of old-timer, new and younger, as well as sub-foremen.
3. Plan must have active participation of top management at all times.
4. Top management must have its own house in order. The foreman function is the same no matter under what type of agreement in employee relationships a company may be operating.

A frank analysis of the all-important problem of current activities of labor unions was made by Thomas G. Spates, of General Foods Corp. "One of the dominant factors in industrial relations is the unquestionable political-mindedness of certain trade union leadership," he said. "The pendulum has swung too far in this direction and the final answer lies somewhere between the former indifference of management to relations of employer to employee, and the present widespread use of compulsion through legislation and political leadership in trade unions. There is a growing development in many major industries of industrial associations of employees which is a voluntary employee movement in defense of some of the tactics of the more aggressive trade union leaders."

T. M. Forbes, who presided at a session

Mr. Spates said that the next few years might conceivably show three labor movements: Craft unions under the active leadership of the A. F. of L., industrial under CIO, and independent unions under employee leadership.

At the executive session, James O. McKinsey, chairman of the board of Marshall Field & Co., Chicago, stated that industrial relations means more than a relationship between industry and labor, and affects all persons interested in the results of labor's activities, such as consumers and investors, for example. More enlightened leadership and more whole-hearted cooperation is needed. The current disturbing conditions are due to such primary causes as:

1. Maladjustments due to lack of coordination in mass production.
2. Attempts on the part of some groups to take unfair advantages, and no group is without guilt in this respect in some degree.

The correction, Mr. McKinsey said, lies in one of two directions:

1. Greater control and guidance through Government action.
2. Enlightened business leadership:

a. We need to re-define the purpose of business so as to definitely include its social obligations.
b. We need understanding of the causes and nature of the present problem of Industrial Relations.
c. We need development on the part of executives of an open research, experimental, evolutionary and philosophical attitude of mind.
d. We need to study our strategy as business men so as to stimulate each other to saner and sounder thinking.

Third Major Expansion

Of Martha Mills marks another milestone in orderly growth of tire-cord company

THE third major expansion of Martha Mills, the tire-cord plant of B. F. Goodrich Co., located at Silvertown (formerly Thomaston), Ga., has just been completed. This marks one more stage of an orderly and consistent growth since the mill was established in 1926 with one unit of 30,000 spindles. Under the leadership of Albert T. Matthews, vice-president and general manager, who has been in charge since its beginning, the mill has kept abreast of all developments in modern tire-cord manufacturing, and now is the largest plant in the United States making tire cord exclusively. The various additions from time to time have created opportunities for such revision of layout and details of manufacture as were necessary to keep the growing establishment in first-class order.

The development of this plant from a production of 100,000 lb. weekly to 625,000 lb. has been accomplished in several steps. The first unit, constructed in 1926, consisted of a three-story mill building, 135 x 435 ft., with brick bearing walls, steel beams, and wood floors. Additional buildings housed the opener room, picker room, boiler room, and warehouses. In 1929, 60,000 additional spindles necessitated increasing the main building, now known as Unit A, to a total length of 1,100 ft., with corresponding additions to the other buildings. In 1934, Unit B was constructed, 135 x 345 ft., three stories, of a similar construction to Unit A.

A water filtration plant, with a daily capacity of 1,500,000 gal., was built in 1935 to supply the mill and village houses with an adequate amount of pure water. Today, a 200,000 gal. reservoir is available as a primary supply for fire-pumps, along with two 100,000 gal. elevated tanks available as a secondary supply.

The entire property is protected with adequate automatic sprinkler systems.

The 1937 expansion consisted of Unit C, a three-story 135x260 ft. building, and a four-story cotton warehouse, 130x150 ft. This addition brings the active spindleage to a total of 135,000 spindles. Unit C is a complete unit with carding, spinning, Barber-Colman spooling and warping, and twisting and winding. Extensions were also made to the picker room and opener room to provide for two new lines of opening equipment and four new one-process pickers necessitated by the addition. The machinery arrangement as a whole is one of smooth-flowing efficiency. Each addition has been made with a view toward ultimate finished development and has therefore been accomplished with a minimum of machinery rearrangement. This policy also has made possible a unity in architectural design.

Latest Additions

The two latest buildings, Unit C and the cotton-storage warehouse, embody certain basic differences in design from the bearing-wall construction of the earlier units. Recent violent windstorms and the damages resulting from them, even to buildings considered well-designed and constructed, have focused attention on the desirability of designing buildings more resistive to these forces. The new buildings were designed and constructed with this thought in mind. For example, instead of the bearing walls, there is a self-supporting steel framework which supports the comparatively thin exterior brick curtain walls. Steel columns, girders, and spandrel beams are completely riveted. The floor systems consist of heavy planking resting on the steel beams, and maple-finish floors.

The new warehouse, providing storage for about 30,000 bales of cotton, consists of twelve 50 x 130-ft. compartments. The north compartment houses the cotton buyer's office, sample rooms, classification room, and all cotton records. The classification room is equipped with a skylight designed according to Government specifications issued by the U. S. Bureau of Standards.

The mill is equipped with Saco-Lowell spinning frames, all of which are long draft. The roving frames are part long draft and part conventional draft. Barber-Colman automatic spoolers and super-speed warpers are in use. Individual motors and V-belt drives are used on all spinning and twister frames. Two- and four-frame drives operate roving frames. Opener equipment consists of eight lines of opening machines with blending feeders. The picker room contains twenty one-process pickers. Openers and pickers are divided into four groups or units, and arranged to handle four different types of cotton.

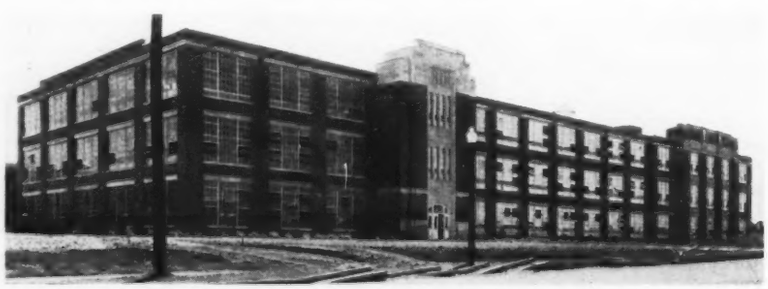
Humidification of Unit C is carried out with Bahnson humidifiers. The building is heated with a pipe-coil system and h.r.t. boilers. Lighting is according to modern ideas of efficiency, employing R.L.M. dome reflectors.

Martha Mills has always enjoyed a reputation for having extremely cordial management-employee relations. One of the factors contributing to this undoubtedly is the modern village maintained by the mill. It consists of 700 houses, of which 60 were recently added. These houses accommodate 784 families. Each is equipped with modern plumbing and sanitation, including complete bathrooms, kitchen sink, and hot-water heater.

The village also includes an excellent school system, community houses, theater, stores, and recreational facilities. These properties are kept in good condition at all times by means of a definite maintenance program.

Robert & Co., Atlanta, Ga., engineers, have had charge of all work at Silvertown and have served in this capacity since the original Goodrich plant was constructed there, except for 60 residences recently built. These were designed by R. Kennon Perry, architect, Atlanta, Ga. All mill buildings, warehouses, and residences were built by Batson Cook Co. of West Point, Ga., except the first 184 houses and the last 60 houses, which were built by B. H. Butts, Jr. of Thomaston.

This plant is located on No. 3 Highway, 68 miles south of Atlanta. Visitors are welcomed and will be piloted through by competent guides, according to an announcement made by the management.



Unit C, the latest addition to Martha Mills

A cotton-mill carder tells of his quest for

That Larger Package

By Lamar Fogel

MANY OF the suggestions which Mr. Fogel offers for the improved operation of roving frames building large packages are applicable to machines building any size of package.

FOR many years in the mill where I am working there had been an established standard of 14 oz. of roving on the full bobbins from the 8x4 fine-roving frames. Being cognizant of the fact that the large package in textile manufacturing is a step toward lower production costs, especially in doffing and creeling, I was led to seek some means of increasing the sizes of my roving bobbins at each process.

Competition was so keen that a changeover to long draft was made in the spinning department. This allowed coarser counts of roving to be produced in the preparation department without fear of stretching in the subsequent processes. It also allowed a longer traverse on the bobbins without causing breaking back in the creels of the spinning frames.

Traverse Increased

The traverse was increased ½ in. from 7⅝ to 8⅛ in. This did not cause any run-over at the tops and bottoms of bobbins, except where the flyer pressers had been bent out of proper shape or on those bobbins where the flyer, after having been taken from the spindle during the doff to remove a single, double, or some other defect, had not been replaced on the spindle properly. In other words, the eye of the presser had not been lined up perfectly with the original layers of the bobbin.

The taper was next considered. A small gear was being used on the frames, and an additional amount of roving could not be put onto the bobbins without first making some provision for closing builders until a full 4-in. bobbin was built. This necessitated removing the builder blocks and screw and cutting off a sufficient amount of the short nut or block to close up the builder to the point needed for producing the size desired.

The taper gears were increased four teeth. This produced a blunter taper, which augmented an increase in the size of the bobbin by increasing the outside stroke from 3½ to 4½ in.

It might be well to state that this taper problem must be considered from two angles, as too blunt a taper will cause a lot of loose-bunched, slip-over-end bobbins on the self-balanced-carriage type frames. Also this might cause breaking back in the subsequent creels, due to the ends slipping or pulling over and under the ends of the tapers and pulling apart rather than turning the bobbins as they should. To shorten the taper on the American-type screw builders, increase the number of teeth in the taper gear, as it is a driven gear. On the English-type latch builders the reverse is necessary as the latches release the tension gear that turns the taper gear, which in turn drives the poker rod in the two-bar governing the taper.

Many claim that a close lay of roving is conducive to stretched roving, though I do not fully agree with this. Others claim that the lay gears should be changed to control the tension, rather than the tension gears. I am noncommittal on this, but stretching does go on where the roving is piled. Still, furrowed roving is not so firm on the bobbins as the closed-lay roving; and the open lay leads to tangled bobbins, due to softness and uncontrolled tension.

There is the objection that if the lay of roving is close and a layer or portion of a layer of roving is removed near the change of the carriage, the bobbin cannot be completely filled without wrapping the presser less than the standard two and one-half wraps. This same condition will exist even with the more open lay. With either method, when such an amount is removed from the body of the bobbin of roving and the pressers are wrapped properly, the roving will sag unless a material of some kind is placed under the top clearer over the front roll to retard the speed—"thumbing" the roll it is called. This is a place for uneven roving with either practice. I am sure that 60% of the tangled bobbins made on roving frames can be attributed to broken ends that have been pieced after a portion of the roving has been removed from the bobbin.

The principal advantage of the closer lay is in making sure that these ends can be run only where the smaller amounts have been removed from the bobbin due to singles, doubles, or some other defect. The breaking back of an occasional end is far less undesirable than the unevenly wound bobbin that is undersized or soft. A good frame tender would much rather watch his machines closely than put up a lot of broken-back ends or piece up a lot of ends that have come down several times during the doff.

The quest for a large package was aided by reducing the size of the lay gear by two teeth.

Cones and Flyers

Bottom cone gears are often changed in order to get the correct starting tension, and on some makes of fly frames there is scarcely enough space on the cones to fill the flyers to capacity and not rub the selvages of the cone belts.

Objections are made to running the cone belts on the smallest points of the bottom cones, it being asserted that the oil seeping out of the cone bearings will cause the belts to become oil soaked, slip, and finally rot. This can be pre-

vented by the use of semi-, non-fluid, or solidified oil, or by the use of a pressure-lubricant fitting. Since these journals move slowly, lubricating the bearings more than twice weekly is a waste.

Cork-insert cones are an experiment proving good and bad. Some use them successfully. Others dislike and condemn them. While the inserts are new, they work well; but after several years of usage the clinging effect is lessened or lost. The supposed vacuum effect is not so evident as it is assumed to be.

Then there comes the capacity of flyers to be considered. One make of roving frame is constructed to take $\frac{1}{8}$ in. over the size commonly named, such as 10x5, building a $5\frac{1}{8}$-in. bobbin. Properly balanced and evenly opened flyers are very necessary when the size of the delivered bobbins is increased, and they should be balanced at least once annually. Several of the hollow legs may be worn to an extent to require building up to make a well-running bobbin.

Incidentally on any job that is being run anything like full time—that is, eighty or more hours weekly—the spindle and steps should be inspected closely for wear. Worn tips on spindles will cause ends to come down and will provide tangled work. Cost of reversing these spindles will be more than repaid.

Worn steps tend to cause high and low spindles in the set; and if they are allowed to wear through, they will cut spindle shafts and cause them to break. Steps wearing through will allow the spindle points to wear off when allowed to contact the spindle shafts.

Doffing Reduced 18%

In this increase of the size of the bobbins, it was necessary to make three gear changes; namely, lay, taper, and bottom cone gears. By making these changes, it has been possible to increase the bobbins from 14 to 16.5 oz., which means a reduction in doffing of approximately 18%. Similar changes have been made on other processes.

Even a further reduction seems possible. For example, the outside diameter of the barrel of the bobbins could be reduced a small amount to allow one or more extra layers of roving to be placed on the roving bobbins. This is not easily done, but when new bobbins are purchased the specifications can call for $\frac{1}{16}$ or $\frac{1}{8}$- in. smaller diameter than the standards now being used without reducing the wear resistance or strength of the bobbins sufficiently to cause breakage. Naturally the less wood in the full package, the greater the amount of the running stock carried in each.

Tension is a great factor in the manufacturing of good, even roving. The degree of tension can decrease or increase the breaking strength of the yarns produced. This may be a radical statement, but a series of tests will convince the most skeptical. Extremities should be gone to, the effects observed, and a happy medium struck.

Too taut ends will decrease breaking strength. Ordinarily well-running ends will give the standard requirements, but under most conditions the consistently slack-running ends will increase the break factor. However, decreasing spindle speeds will many times be inevitable. The extreme of baggy, flopping ends will make unevenly wound, lumpy, gouty bobbins of roving that will in turn make uneven yarn and also cause excessive end-breakage. Tight ends, like fiddle strings, cannot help but stretch.

Too much twist will cause hard ends in many cases, and too little can stretch the roving and lower the break tests. Reduction of spindle speeds in order to run the proper amount of twist is necessary in many instances. However, apparent retardation of production can be overcome by taking out twist. In one case I know of the spindles on 7x3½ roving frames were running 1,425 r.p.m., the front roll was running 161 r.p.m., and 4.20 hank roving was made. This speed was reduced to 1,200 r.p.m., and the twist was reduced by five teeth. The front roll speed was maintained and the production remained the same, much to the satisfaction of the management. There was better roving and more even yarn, fewer ends down, and cleaner machinery. Repair and maintenance costs were reduced.

Textile Uses in Aircraft

WITH comfort and luxury becoming increasingly important in air travel during recent years, manufacturers of the most modern air liners are paying very close attention to their textile requirements. In the construction and furnishing of these carriers, the industry uses a wide variety of fabrics, which is gradually developing a promising market for certain types of textiles. In studying the possibilities of this market, textile manufacturers should keep in mind that textiles used in the newest types of aircraft are bought according to definite specifications to insure that the merchandise will meet the special requirements of air carriers.

Interior cabin scene on a Skylounge Mainliner of United Air Lines.

The present policy of the aircraft industry with respect to textiles has five main divisions, as follows:

Important changes in types of textiles used: Two general trends are outstanding—first, toward fabrics which combine most favorably the qualities of light weight, durability, beauty, sun-fastness and ease of cleaning; and, second, toward a much stronger weave. Other important developments are: carpets have increased in weight per foot, this being the only fabric in which the weight requirement for aircraft use has changed appreciably; there is also a decided preference for fabric colors which match the tints in lacquer colors, now increasingly used in interior decoration.

Textiles preferred for interiors: Broadloom carpets are favored as being more durable and for good appearance qualities. Mohair frieze is used because of its resistance to wear. Single and two-toned colored wool broadcloth is widely used for cabin chair upholstery as giving best combination of color, appearance and durability.

General types of textiles most used: Cotton, wool, linen and mohair woven fabrics.

Fabrics used for curtains: Cotton, silk and rayon fabrics are used in about equal quantities.

Soundproofing: Kapok felt is used in pieces usually $\frac{1}{8}$- or $\frac{1}{4}$-in. thick. Kapok is regarded as one of the best insulating materials. Seapak, a commercial product combining Kapok with paper pulp, also is used. As employed in certain aircraft Seapak consists of one, two or three layers or plies, covered on one side with a cotton netting and on the other with a flannel cloth, the two being quilted together. The designation for this material is "Seapak Airplane Quilted Single (or Two or Three) Ply Covered." The manufacturer of Seapak is the Seaman Paper Co., Chicago. The science of soundproofing as applied to aircraft is still in its infancy, and it is expected that constant improvement will be made through the use of new materials, including textiles, and by better methods of application.

Fabrics used in certain planes: In carpets, the broadloom type; in window curtains, gros-grain silk taffeta; in side walls, hat rack and ceiling, grade A airplane cloth; for Kickpad and hot air duct covering, frieze mohair.

We are glad to acknowledge our indebtedness to W. C. Mentzer, engineer, United Air Lines Transport Corp., for valued aid in assembling data for this article.—*Editor.*

Silk and Rayon Finishers

Make belated efforts to save their industry from complete decay

By Winn W. Chase

Assistant Editor, Textile World

WHAT can be done to save the silk and rayon dyeing and printing industry from complete decay? Belatedly efforts are being made to find the answer to this question. The most recent attempts have been the retaining of General Hugh S. Johnson to make a survey of the printing branch of the industry and the institution by the Paterson (N.J.) Industrial Commission of Federal Trade Commission hearings with a view to establishing fair-trade rules for the industry.

The Johnson report, which was presented on June 4, to the group of printers who financed the survey, gives as the chief cause of the "sick, demoralized condition" of the printing industry "a singular deficiency of ethical concepts upon which healthy competitive relationships should be founded." Any hope of remedying this condition, according to General Johnson, "requires an absolute insurance against the destructive and general practice of secret rebates throughout the industry." The method of obtaining such insurance recommended in the report is through: (1) the establishment of a "Fund Management" which would act as a coordinator of the industry and which would administer a permanent reserve fund and a revolving fund, both contributed to by each member of the industry; (2) development of an industry fair-practice label to be permitted to be used by individuals in the industry only so long as they comply with both the fair-trade practices and industry agreements administered by the Fund Management and with all labor agreements between the industry or its members and labor unions chosen by employees for collective bargaining; and (3) insertion of a clause in all labor contracts to the effect that the employer shall at all times be a member in good standing of the industry organization, this clause to be so drawn that any violation of the labor contract will violate the industrial agreement and any violation of the industrial agreement will void the labor contract.

While full details of the Johnson plan have not been made public, presumably the Fund Management or coordinator would set up trade practice rules for the government of the industry. Violation of these rules by any member would be penalized, not only by withdrawal of the right to use the industry fair-practice label and voiding of the labor contract, but also by withholding from the offending company its normal share of the revolving fund which is to be distributed to the various members at the end of the fiscal year on the basis of net sales.

The remedial measure advocated by the Paterson Industrial Commission bears some resemblance to General Johnson's proposal, in that it involves the setting up of rules designed to eliminate unfair trade practices in the silk and rayon finishing industry. This plan, however, does not call for a coordinator or "czar"; but would have the Federal Trade Commission establish fair-trade standards governing practices in the industry. Furthermore, it covers dyeing as well as printing.

Fair-Trade Rules

The rules advocated by the Industrial Commission are divided into two groups. The first group—which embraces practices which are considered to be unfair and unlawful within the decisions of the Federal Trade Commission and the Federal Courts—includes provisions covering discriminatory rebates and other allowances, false branding, deceptive selling methods, misrepresentation, defamation of competitors, commercial bribery, breach of contract, misleading price quotations, prizes and premiums, substitution, selling below cost, impersonation, threats for patent infringement, coercion in sales, imitation of trade marks and labels, brokerages and commissions, advertising and promotional allowances, discriminatory services, and illegal price discrimination. The second group—which embraces practices which do not, *per se*, constitute violations of the law, but are considered to be unethical, uneconomical, or otherwise objectionable—includes provisions covering observance of contracts, cost records, publishing of price lists, and settlement of business disputes.

Following conferences between the Industrial Commission and members of the finishing industry, a hearing on the proposed pact was held under the auspices of the F.T.C., on July 27. Representatives of the industry present at the hearing voted practically unanimously for the adoption of the rules and elected a committee on trade practices to cooperate with the F.T.C. and to take steps to put the rules into effect. The F.T.C. will now consider the proposed rules, together with suggestions for their amendment which were made at the meeting or which may be transmitted to the F.T.C. subsequent to the hearing. Revised rules will then be submitted to members of the industry for their final approval.

Prominent members of the finishing industry in Paterson, local union officials, and manufacturers of chemicals and equipment all favor the elimination of unfair trade practices. Most finishers agree that the establishment of Federal fair-trade standards is a step in the right direction. Some believe, however, that this alone is not sufficient and, in addition, would like to see the Johnson plan adopted and the General named as coordinator. This latter group feels that an industry coordinator, having the punitive power afforded by the Johnson plan, could move quickly to prevent violation of trade-practice agreements, whereas the F.T.C. can act only after a rule has been violated. On the other hand, as acceptance of the Johnson plan entails participation in the financing of the program, it appears problematical at this writing whether it will be possible to obtain the approval of a substantial numerical majority of the members of the industry representing not less than 85% of the productive capacity of the industry—this, according to General Johnson, being an essential, without which he could not accept responsibility for the success of the plan.

There is no doubt that elimination of secret rebates and other unfair trade practices would ameliorate conditions in the silk and rayon finishing industry. It would be a mistake, however, for members of the industry to become too optimistic—to get the idea that removal

of these evils would solve all their problems.

Bad as they are, essential as it is that they be abolished, these unfair practices are not the only reason, or the chief reason, for the present unsatisfactory state of affairs in the silk and rayon finishing industry.

Surplus Equipment

The Johnson report touched on some of the other causes, but it did not dig to the roots of the matter. Take the matter of surplus machinery. In one place the report states that the industry is not under any over-bearing burden of excess capacity. Yet the survey itself showed that last year there were some 30 idle printing machines, representing 14% of the industry. The General himself commends the purchase, lease, or sale abroad of surplus machinery. It is obvious that with over 200 printing machines in place and annual production of silk and rayon prints only about 150,000,000 yd., the industry has far more productive capacity than is necessary to meet the heaviest of seasonal demands. Elimination of surplus equipment—whether or not it is only "a temporary expedient," as the General implies—is a problem which should not be dismissed too lightly.

External Factors

Most astounding of anything in the Johnson report is the following statement: "Unlike many industries, external factors do not threaten its health."

Is it not true that the great majority of the silk and rayon finishing plants are located in the Paterson area, where wages, taxes, and water rates are high —where frequent labor troubles have all but compelled a general exodus of leading finishers from that section? Are relations between finishers and converters all that could be desired? Do Census figures lie when they show that production of all-silk and silk-mied fabrics dropped from 500,000,000 yd. in 1929 to 284,000,000 yd. in 1935—that production of all-rayon fabrics increased from 62,000,000 yd. to 735,000,000 yd? Is it not a fact that in the last three or four years the cotton finishers have been competing directly with the silk and rayon finishers for business in many types of rayon goods?

The answers to these questions are common knowledge in the industry. Of the combined yardage of all-silk, silk-mixed, and all-rayon fabrics, cotton finishers processed just about one-half of the total 1,000,000,000 yd. which were produced in 1935. The General's own report indicates that New England cotton finishers are printing at least 12% of the "silk-type" of rayon fabrics.

Competition Increasing

As cotton finishers become more and more skilled in handling the silk-type of rayon fabrics it seems certain that the silk and rayon finishers will face a further progressive loss of business. Barring unforeseen developments, the indications are that in the next few years the silk and rayon finishing industry as it is now constituted will shrink to perhaps half of its present size as gaged by volume of business. In this process of shrinkage the poorly financed and inefficiently operated plants will inevitably be forced out of business. The survivors will concentrate on the processing of a lesser volume of all-silk, silk-rayon, and higher-quality all-rayon fabrics which cannot be handled satisfactorily by the mass-production methods of the cotton finishers.

It is not to be expected that establishment of fair-trade-practice standards will prevent this diminution in the size of the silk and rayon finishing industry. Coupled with measures for eliminating from production the increasing amount of surplus equipment, such standards, if enforced, will make for a more orderly contraction of the industry to a size which is commensurate with the demands on it. As they would hasten the disappearance of the weaker units, they would prove of particular benefit to those companies which are well managed and properly financed. In addition, they would have the more immediate effect of doing away with the infamous practices which have sprung up in the industry.

Many unsuccessful attempts have been made in recent years to improve conditions in the silk and rayon finishing industry. They have failed because the industry was apathetic when not in active disagreement. Now for once the finishers concur in the belief that action is imperative. They have taken the first step toward the establishment of Federal trade-practice standards. But that is not enough. At best it will be several months before such standards are finally approved. Now that the iron is hot, the finishers should not delay in setting up a strong central organization of its own with powers to enforce such rules as the industry agrees are immediately necessary.

Paterson's Problems Analyzed

A DISCOURAGING picture of the plain goods silk industry of Paterson, N. J., which picture however, is brightened by a list of corrective suggestions, evolves from a comprehensive report just published by the Industrial Commission of Paterson. The report, written by Herbert S. Swan, industrial consultant, presents the results of a survey made by Mr. Swan for the Commission in December, 1936.

The survey covered 405 plain goods silk mills, operating 10,926 looms. It was undertaken to supply a basis for working out a long term program of rehabilitation and stabilization of conditions in the Paterson silk textile industry..

The steady deterioration of the industry in all chief aspects—labor conditions, equipment, manufacturing, selling standards, etc.—is unfolded, in text and tables, through the report, and it makes grim reading. Here are a few salient points: On wages—weavers earn from $5 to $25 weekly, and out of 2,630, 1,018 weavers received $12.01 to $15; out of 338 winders, 187 earned $8.01 to $10; most warpers earn from $15 to $30. Most mills are on the four loom load but the trend is toward as much as 8 looms per weaver. On fabrics—7,432 looms are on silks, 1,458 on rayons and 1,160 on unknown fabrics. Equipment statistics show that 83% of looms are Crompton & Knowles machines.

The final chapter of the report has two chief divisions, findings and recommendations. Mr. Swan finds: completely chaotic working conditions and below-subsistence wages; commission manufacturer is abjectly dependent on N. Y. converter; silk looms, at best, are unsuitable for making rayons, at worst, are unfit for silk weaving; employment is split between feverish spells of intense activity and long periods of little or no work; any change in consumer demand from silk to rayon for women's underwear would practically destroy the industry; textile strike record, "blackest page in Paterson history", is due to blind unintelligence of both capital and labor leaders; Paterson-made fabrics, due to poor equipment, now are in bad repute in N. Y. market.

He recommends: liquidate insolvent mills, now a substantial part of the industry; junk inefficient machinery and mills; amend Wagner act to give labor unions legal responsibility thus assuring validity of labor contracts; mills should take steps to recapture lead in styling, coloring and designing fabrics instead of being "just weavers"; consolidation of small mills; and formation of a strong local organization of silk manufacturers to bargain collectively with labor. (This last project is reported in process of development.)

Silk Merchandising Forum

Guild's "Open House" for retailers proves constructive

SILK fabric merchandising was subjected to one of the most searching analyses in its history on July 20, when nearly 250 retailers and manufacturers studied the problem through a 14-hour session at the Waldorf-Astoria Hotel, New York. The occasion was a Fashion and Silk Merchandising Forum held under the auspices of the International Silk Guild. The event had three major parts (a) a morning session made up of interviews with leading retail merchandisers of piece goods, in charge of Jay D. Runkle, retail merchandising executive; (b) an afternoon session including a talk on fall fashion trends by Miss Jessica Daves, managing editor of *Vogue* and a silk fashion show presided over by Miss Ethel Herrell, secretary of the Guild; and (c) a dinner, presided over by Paolino Gerli, president of the Guild, at which addresses were made by Philip A. Vogelman, president of Onondaga Silk Co., Harold A. Brightman, general merchandising manager, L. Bamberger & Co., and R. D. Jenkins, vice-president of the Guild.

The feature of the event was the unusual degree of frankness which characterized both informal discussion and formal addresses. Retailers spoke openly about their silk fabric problems, giving facts and figures not ordinarily disclosed, and they criticized alike the manufacturers and their own trade on vulnerable points.

When the Forum adjourned about 11 p.m., after being in session since 9:30 a.m., the consensus of opinion as to silk's merchandising problems might be summed up as follows: both manufacturers and retailers fail to recognize that silk, with the quality and exclusive trade as its chief market, should be sold mainly in that field.

R. C. Kramer (left), chairman of Belding-Heminway-Corticelli Co., and H. A. Brightman, chairman of Merchandise Division NRDGA, snapped at the banquet July 20.

Paolino Gerli (left), president of International Silk Guild and Jay D. Runkle, merchandise counselor for the Fashion and Silk Merchandise Forum, at banquet July 20.

The day's discussion brought out many notable points, as for example, the fact that a surprisingly large number of silk fabric departments in stores in New York and elsewhere are still yielding healthy profits; also it was disclosed that silks are far in the majority in piece goods sales, the percentage scaling from 98, 95, and 80 in the higher-priced stores to 50 in one of the biggest medium-priced stores.

Silk manufacturers present got many valuable slants on how to improve their own position. Six chief suggestions offered to mills were: (a) stop overproducing and make output tally more closely to existing demand; (b) improve the dyeing and finishing of silks, so that the processing will be of as high quality as the fiber used; (c) get more exclusive designs; (d) don't show so many colors of each pattern, because silk's customers insist on individuality; (e) describe goods frankly, stating when weighted, etc.; and (f) encourage garment buyers to see fabrics before making apparel purchases.

The Forum, which of course, was preeminently a gathering of retailers, was equally critical of the store's deficiencies in silk fabric merchandising. Six chief suggestions offered to retailers were: (a) drop price emphasis in advertising and elsewhere, when promoting silks; (b) don't strangle silk's selling prospects by demanding more of a mark-up there than in other fabrics; (c) sell fabrics on a follow-through basis with the aim of giving the customer dress satisfaction as well as fabric satisfaction; (d) buy more selectively from a wider range of sources; (e) make department more attractive and use more model forms to display dresses; and (f) improve fabric department personnel by paying higher wages, and hiring sales persons who are dressmaking-minded.

Thanks to Mr. Runkle's staging of "sit-down interviews" instead of the usual formal addresses, the morning session was converted into a retailers' meeting of a personal and intimate character. Those interviewed included: B. R. Gibbons, piece goods buyer of J. W. Robinson Co., Los Angeles, Frank D. Levi, piece goods buyer, R. H. Macy & Co., New York, Felix J. McGowan, merchandise manager, Lord & Taylor, New York, J. H. Thompson, piece goods buyer, John Wanamaker, New York, and Richard Wallace, display manager, B. Altman & Co.

At the fashion show in the afternoon, nearly 200 new fabrics were displayed on live models. Increased importance of metals was evident.

At the dinner session silk's place in merchandising was analyzed from broader aspects. Mr. Vogelman deplored "the apologetic attitude" taken toward silk stores in advertising and urged closer cooperation between ready-to-wear buyers and silk manufacturers; Mr. Brightman reviewed the fiber identification movement and urged the silk trade to give fullest support to this effort; Mr. Gerli intimated that the Forum might be extended later into a series; and Mr. Jenkins, concluding speaker, spoke vigorously in favor of a "simple solution" of the identification problem, asserting it was not as complicated as generally believed.

R. D. Jenkins, vice-president of International Silk Guild and O. B. Condon, head of piece goods department of Marshall Field & Co. at Forum July 20.

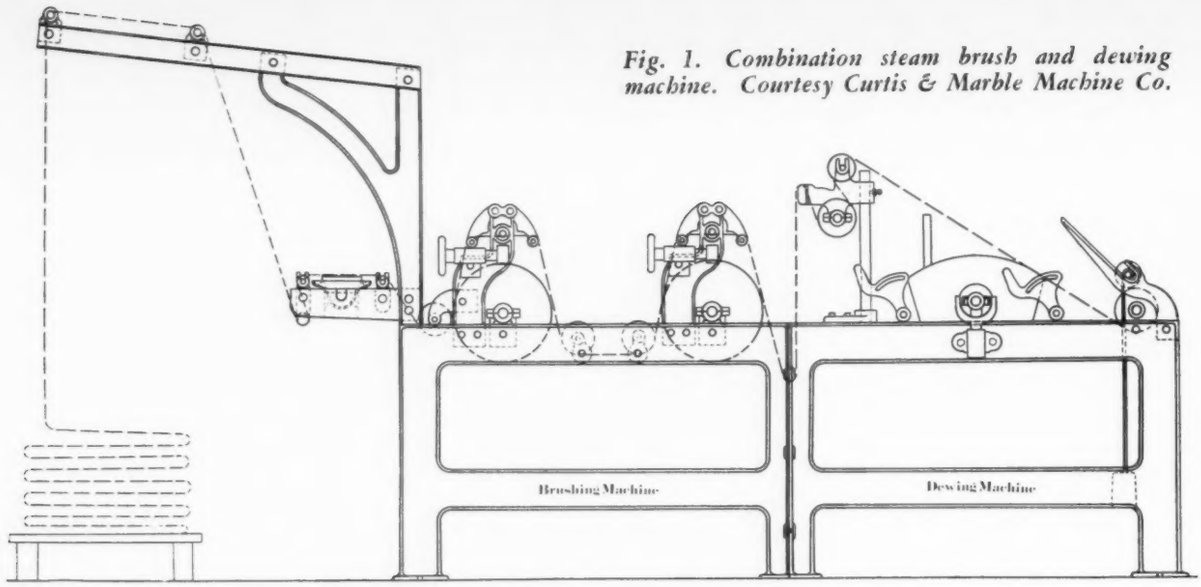


Fig. 1. Combination steam brush and dewing machine. Courtesy Curtis & Marble Machine Co.

New method gives superior results in

Dry Finishing

rayon-woolen blends

By David Welsh

In our July issue Mr. Welsh described a modified procedure for fulling and napping rayon-woolen blends. He now outlines a new method for dry finishing.

AFTER rayon-woolen blends have been fulled, napped, and sheared, the next step in most mills is to give the goods a run on the steam brush, nap up, blowing the steam through to make the nap stand up. The finish obtained in this way looks well at the mill, but by the time the fabric reaches the customer and is subjected to considerable handling it is a mushy mess, the nap presenting the appearance of crushed plush. If an attempt is made to avoid this fault by pressing the goods ever so slightly, the fabric looks pasty. Furthermore, when the goods are exposed to atmospheric conditions for some time, the effect of the light pressing will disappear.

There is, however, a method of dry finishing cloaking and other fabrics containing blends of wool and staple fiber which will impart a superior appearance and handle. The finish is not roughed up by severe handling; the nap stays put. Garments made from fabrics to which this finish has been imparted do not go limp and raggy.

This new finish is obtained by placing two dry finishing machines in tandem; that is, a regular two-brush steam brushing machine and a dewing machine are rigged up to run as one machine. The method of combining the steam brush and the dewing machine is shown in Fig. 1. The fabrics are taken from the shear and placed in front of the steam brush, face to the brush. The first piece is attached to the leader, and the goods are started through the tandem machine, head end first, with the nap down so that the fabric can be brushed with the lay of the nap. No steam is used unless the pieces are coming too wide, in which case they can be narrowed to the desired width by steaming as they pass over the steam box. As the goods pass over the brushes they are cleaned of all the surplus shear flocks and the nap is laid down to its permanent position. After passing the brushes, the pieces are carried over the stretch roll of the dewing machine, which works on the back of the goods, thus avoiding a roughing up of the nap. The face of the goods gets the spray, which is so regulated that it gives a fine dew and does not throw drops of water on the fabric.

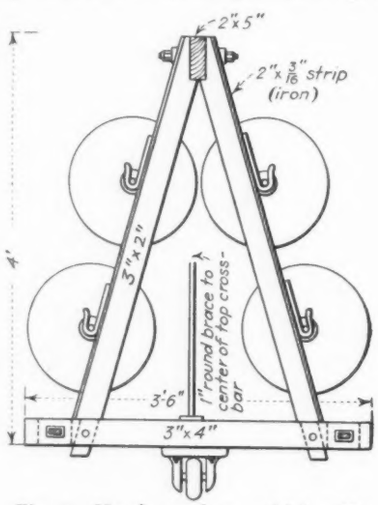


Fig. 2. Handy truck on which rolls are allowed to set overnight.

After passing over the machine, the goods are rolled up, usually three pieces to a roll. They are then placed in racks, resting on the gudgeons, as it is better not to have one roll rest on another. The goods must be left on the roll overnight, or for at least 12 hr. As the moisture dries out, the finish is set; no pressing is required.

Rayon and wool fabrics that are not napped—simply scoured or fulled and scoured, fancy or piece dyed, felted or clear finish—will take a beautiful finish on the combination steam brush and dewing machine. These fabrics also must remain on the rolls overnight.

A handy truck on which four of the three-piece rolls can be placed as they come off the combination steam brush and dewing machine is shown in Fig. 2. After the goods have been allowed to set overnight, the pieces can be pulled over the perch without lifting the rolls from the truck. Gudgeons extending 8 in. from each side of the rolls permit the rolls to be handled easily. A $\frac{7}{8}$-in. maple floor on the bottom frame will add to the strength and life of the trucks and furnish protection to the goods from the dust of the finishing room floor. A few coats of orange shellac on all the woodwork adds to the permanency of the outfit.

When recommendations are backed with

Power Cost Records

executives will listen to the engineer

By Stuart W. Allen

IN many plants the difficulty in obtaining appropriations for modernization of the power department, and for improving uneconomical conditions there, has been the lack of accurate cost data on which to base the recommendations. To obtain sanction for expenditures it is necessary for the engineer to prove that the net returns will be sufficient to warrant the expenditure on this portion of the plant, rather than on some productive department. This means that the cost of steam and power generation should be broken down in the same manner as are production costs and should receive the same scrutiny of the management. This does not require excessive bookkeeping or voluminous records.

For the sake of discussion, the writer assumes conditions in a single plant, and also assumes that the accounts set up can be made a part of the general plant accounting system and tied in with the main books. Considerable variation will be necessary, of course, to fit these accounts to the needs of individual plants. Six main divisions of accounts are set up: fixed charges, labor, stores, repairs, auxiliaries, and credits. These accounts will be posted monthly and totaled by six month periods—the six-month total to be compared with the record of the previous six months, and with an average of the accumulated records of several preceding years. It is not necessary to compare each individual item, the principal points of interest being the cost per 1,000 lb. of steam, cost per kw. of electric power, etc.

The power department is made up of several sub departments, such as steam generation, electric power generation, etc. It is generally advisable to maintain separate figures for each of these, it sometimes being necessary, where a man's time is divided, to allocate it proportionally to each department.

Taking the steam generating department for an example and assuming that coal is the fuel used, the six main divisions would be set up as follows:

Total Fixed Charges — Fixed charges include insurance, taxes, interest on investment, and depreciation. These items are divided between buildings, equipment, and interest on stores. This division of the fixed charge is necessary, due to the difference in the length of time over which the item is to be written off, as well as the difference in taxes and insurance rates. It is generally possible to determine some standard life for buildings and for equipment, for while an individual building or piece of equipment may serve its usefulness in a short period, others will continue in use for much longer periods than anticipated. Experience has shown that an average figure is satisfactory in most instances, except for short-lived equipment, such as motor trucks, or where an installation is made to serve a temporary purpose. In such cases it is necessary, of course, to depreciate at a much more rapid rate. Interest on stores is figured on inventories of general stores, fuel, etc.

Labor—There are several items to be entered under this heading besides those ordinarily thought of as labor. Salaries paid to the chief engineer, mechanical superintendent, clerks, etc., must be allocated in proportion to the time which they normally spend on this work, in relation to the number of men supervised, the value of the materials handled, or in any other manner which will produce an equitable distribution of expense. There is also

DEPARTMENT STEAM GENERATION	JANUARY JULY	FEBRUARY AUGUST	MARCH SEPTEMBER	APRIL OCTOBER	MAY NOVEMBER	JUNE DECEMBER	TOTAL SIX MONTHS	PREVIOUS SIX MONTHS	AVERAGE SIX MONTHS
TOTAL CHARGES									
TOTAL FIXED CHARGES									
BUILDINGS									
EQUIPMENT									
INTEREST ON STORES (INCLUDING FUEL)									
TOTAL LABOR									
FIRING									
ASH HANDLING									
MISCELLANEOUS									
FOREMEN AND CLERKS									
SUPERVISION									
TOTAL STORES									
FUEL (DELIVERED COST)									
WATER (PURCHASED)									
MISCELLANEOUS									
TOTAL REPAIRS									
BUILDINGS									
BOILERS AND AUXILIARIES									
FUEL AND ASH HANDLING EQUIPMENT (INSIDE)									
PIPING									
TOTAL AUXILIARY CHARGES									
TEAMING									
FUEL STORAGE AND RECLAIMING									
ELECTRIC POWER (GENERATED)									
TOTAL CREDITS									
STEAM TO PLANT 1									
STEAM TO PLANT 2									
STEAM TO TURBINE ROOM									
STEAM TO AIR COMPRESSORS									
STEAM TO MECHANICAL DEPT.									
TOTAL WATER EVAPORATED - LB.-PRODUCTION									
STEAM OUTPUT (TOTAL EVAP. LESS BOILER HOUSE USE)									
STEAM GENERATED F&A 212°- EQUIVALENT PROD.									
FUEL USED (TONS)									
B.T.U. CONTENT-AS RECEIVED - PER POUND									
COST PER 1,000 LB. OUTPUT - TOTAL									
" " " " " FIXED CHARGES									
" " " " " LABOR									
" " " " " STORES AND AUX.									
" " " " " REPAIRS									
" " " " EQUIV. PROD. - TOTAL									
PER CENT BOILER EFFICIENCY									

SIX MONTHS ENDING _____

Form suitable for keeping records of power-plant costs in textile mills.

chargeable under this item certain amounts of supervision, or charges of management, which are properly made to this account. Then there are the direct charges of labor for firing, handling ashes, and miscellaneous. Firing covers all general operations, such as boiler attendance, operation of coal crusher, weigh larry, etc. Handling ashes is self-explanatory and covers all labor chargeable to this operation. Miscellaneous covers all labor not chargeable to either firing or handling ashes, such as general cleaning, etc.

Stores—This item is made up of fuel used, electric power when purchased from an outside source, water when purchased, and miscellaneous. Fuel used is generally set up to include the contract price delivered to the plant; but does not normally include storage, reclaiming, or any allied costs, these items being taken care of under the heading "auxiliaries." All other items of material and supplies, such as lubricating oil, packing, etc., are classed under miscellaneous.

Repairs—Repair items should be set up under certain main headings, such as buildings, boilers and auxiliaries, fuel and ash-handling equipment (inside), and piping. A great deal depends on the plant layout, in some plants it being advisable to break these items down still further. In the average textile plant, however, the set-up as given above is generally found to be adequate.

Auxiliaries—There are a number of charges not taken care of under the foregoing headings, and which are incurred by other plant departments. These include such items as teaming, water supply (not purchased), fuel storage and reclaiming, and electric power generated. Separate accounts are maintained for all auxiliary departments, the expense of these being allocated in accordance with use. In the boiler house under consideration, a proportionate charge would be made for these items in the same way as for stores.

Credits—The boiler house, repre senting as it does an auxiliary department, must charge for its product in the same way that it in turn is charged for services and commodities of other auxiliary departments. This is taken care of by charging for the value of steam transmitted from the boiler house to the various departments. Any item which has been charged to the boiler house and is transferred to another department should be entered under this heading. Credits should equal charges.

Figures covering water evaporated, steam generated, fuel used and its heat content, etc., are obtained from a monthly report through the general plant accounting system. From these figures costs per unit of production are obtained and are entered to show the portion chargeable to fixed charges, labor, stores, repairs, and auxiliaries. In this way, when a variation in cost occurs, it is possible immediately to determine the cause of the increase and undertake remedial measures. A form suitable for keeping the records is shown in the accompanying illustration.

When the records, as outlined above, have been kept with any degree of accuracy, it is easy to determine when and why costs increase. By keeping informed regarding outside developments, it is possible to determine whether or not the costs are higher than they should be. As a consequence, when the chief engineer suggests an expenditure for replacements or improvements, the information is readily available as to whether or not this expenditure is justified. Many managers will be surprised at the amount of money which they are throwing away annually, and which could easily be saved by a little intelligent study and application of these simple cost records.

Iridescent Hosiery brings new problems to the dyer

THE advent of iridescent hosiery during recent weeks has been welcomed by the women's full-fashioned silk hosiery market as giving a fillip of interest which is stimulating sales during the seasonal lull. This type of stocking, so dyed as to give a changeable color effect, is being offered by an increasing number of mills, including leading firms. So far the trade views iridescent hosiery more as a passing fad than as a permanent development; however, it is being promoted actively for its style and novelty interest. The line sells in a limited range of colors and at the same price as staples.

This call for iridescent color hosiery has brought a number of new problems to the dyer. These problems involve the selection of dyes which will give changeable shades, the development of suitable dyeing procedures, and the establishment of a line of shades which can be matched with reasonable accuracy.

There are a number of dyes which produce an iridescent or changeable effect when dyed on transparent fibers like silk or mohair; but which do not show it when dyed on the more translucent fibers like cotton or wool. Among the outstanding iridescent dyes are the following: Rhodamine B (C.I. 749), Rhodamine 6G (C.I. 752), Fluoresceine (C.I. 766), Thioflavine T (C.I. 815), Eosine B (C.I. 768), and Victoria Blue (C.I. 729).

These basic dyes can be applied to silk in a neutral bath or in a broken boil-off liquor bath. Some dyers are using the split-bath method—with the addition of a little acetic acid—for dyeing hosiery. Others prefer first to degum the goods and dye the cotton seams in one bath, and then apply the basic dyes in a fresh bath.

Iridescent effects can also be obtained by use of certain acid dyes, particularly when dyes of widely different shades are combined. One of the best examples of this is in shades produced with combinations of Acid Violet 4BN (C.I. 698) and Naphthol Yellow S (C.I. 10). Dyeings produced with this combination show radical changes in shade when lighting conditions vary. There are various combinations of reds and greens which give this effect and which can be discovered by a little experimenting. Acid Anthracence Red 3B (C.I. 487) is one dye which has been used quite extensively in combinations.

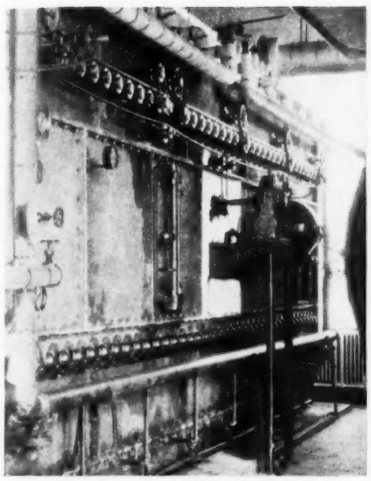
In a paper presented April 17, at a meeting of the Piedmont Section, A.A.T.C.C., J. R. McAteer, of Hatch Full-Fashioned Hosiery Mills, pointed out that ordinarily acid dyes are applied by the usual two-bath method, the goods being boiled off first and the dyeing carried out in a fresh bath. Various little tricks or kinks are used to obtain the best results, such as dyeing the cotton seams with direct dyes before adding the acid colors to dye the silk. According to Mr. McAteer, due to their better fastness qualities and the greater ease with which they can be stripped, acid dyes are usually preferred to basic dyes, provided combinations can be found which will give sufficient iridescence in the shades required. Likewise there is less danger of dye spots than when basic and direct colors are used in the same bath.

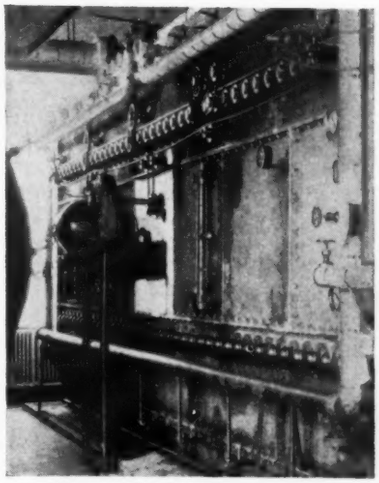
On account of the different effects seen under different lighting conditions, matching of iridescent shades on hosiery is extremely difficult. Use of the same combination of dyes to reproduce a given shade and matching of shades under a daylight lamp minimizes this difficulty.

Pre-cooling of cloth aids control of

Ager Temperatures

in printing with vat colors





By Malcolm Mackay

ONE of the greatest worries of the printer is the proper control of temperature during the ageing of goods printed with vat colors. Any variation of temperature inside the ager causes a variation in the shades produced. There are two general methods of controlling the ager temperature. (1) pre-cooling the cloth before ageing, and (2) regulating the moisture content of the ager atmosphere. In this article the writer will describe briefly the way in which pre-cooling of the cloth is carried out in various plants; in a subsequent article he will discuss ways in which the moisture content is regulated.

It should be noted first, however, that a necessary part of ager equipment is a thermometer that extends to the middle of the ager, between the folds of the cloth, equidistant from the bottom and top rolls, and connected with a recording chart. The thermometer should be located about halfway between the front and middle of the ager, as most of the heat generated from the chemical action of reducing vat colors collects at this point. The temperature on the side of the cloth may be five to ten degrees less than at the middle of the cloth.

Methods which are being used for cooling the cloth before ageing include the following:

1. SWINGING THE GOODS—One method of cooling goods preparatory to ageing is to use an auxiliary swing or plaiter to move the goods from one truck to another. In this method the goods are run over several bars or rollers, with or without a fan blowing on folds of cloth, and then through a swing or plaiter and into another truck. In this way considerable heat is given off to the surrounding air and some moisture is taken from the air by the cloth.

2. COLD-WATER CANS—Some plants have cold-water cans immediately behind the drying cans, and the printed cloth is passed over these cold cans before being plaited into trucks. Other plants place the cold-water cans in front of the agers and pass the printed cloth over them before allowing it to enter the agers. This method removes most of the heat taken up by the cloth in the drying process. The danger of this method is that the cans may sweat or spring small leaks and consequently cause water spots.

3. STEAM BLOWING—De-superheated steam can be blown on to the back of the ingoing strand to replace the moisture removed from the cloth in the drying process after printing. In this method the goods enter the ager face up. A large perforated pipe is placed about 1 in. below the ingoing strand, with the perforations toward cloth. Inside this pipe is another perforated pipe with the perforations down, so that any condensed moisture will be caught by the inclosing pipe and not be blown onto the cloth. This inside pipe is connected with a de-superheater where superheated steam is used, or with a low-pressure line where de-superheated steam is used. The de-superheated steam carries considerable moisture and this moisture is absorbed from the steam by the cloth before the goods enter the ager. This absorbed moisture will take the place of moisture that ordinarily would be absorbed from the atmosphere of the ager, thus preventing the rise and variation in temperature which follows absorption of moisture from the ager atmosphere.

4. HOT FLUE—This method of temperature control is used extensively. The printed goods leave the printing machine, pass through a flue heated by steam coils, and then are plaited into trucks. This method of drying subjects the whole piece of printed goods to a uniform temperature, whereas steam dry cans dry and heat the middle of the goods more than the sides and also tend to over-dry the goods. The hot flue removes the moisture from the printed colors, but does not over-dry the goods. Incidentally, the hot flue has been successfully used not only with vat colors, but also with aniline black printed on heavy goods with fine engravings; it has also given good results on fabrics, such as rayon and silk, which may be injured by contact with dry cans.

5. DRY CANS BARELY HOT—Use of a reducing or control steam valve on the dry cans is another method of controlling the temperature and the moisture content of the printed goods. This valve is set to give just enough steam to the dry cans so that the printed colors come off the dry cans dry but not over-dried. Of course, the speed of the printing machine has to be taken into consideration in setting this control valve, as the goods will dry more rapidly at slow than at high speed.

6. FOG CHAMBER—Some plants replace moisture in the dried and printed goods by passing the goods through a fog chamber. The fog chamber is equipped with very fine jets which give off moisture in the form of a fog. These jets are so set as to replace exactly the same amount of moisture in the goods as was removed in the drying process. The goods absorb moisture from the fog and this moisture takes the place of moisture that would ordinarily have been taken from the ager atmosphere.

Visual Control

of production is desirable in the small woolen mill

By Joseph E. Martel

IN a large mill the five functions of management — production control, cost control, material and stock keeping, labor relations, and maintenance of plant and equipment—would each be allocated to separate departments. In small mills this system is not economical. Nevertheless the writer believes that even the small mill should be so organized that each of these functions is taken care of adequately, duties and responsibilities being divided among the key men. The method of production control described below is suitable for a woolen mill of 50 to 100 looms, running on staple goods.

The progress of an order through a woolen mill has been charted in Fig. 1. The order is received by the executive in charge of the plant, either from the sales department of the company, the commission house, or direct from the purchaser, as the case may be. This executive decides as to the advisability of accepting the order. Orders rejected are referred to the office for attention, while those accepted are checked with stock records and taken from stock where there is such.

Where no stock is on hand, the order is given to the plant manager, who issues orders to the store for raw material or orders it if none is in store. He then issues the order to the superintendent of operations, who in turn issues orders to the departments. As the work proceeds through the departments the orders are filed in some form of inventory.

Many orders are necessary to operate a mill. The question arises as to ways and means of keeping a balance in machine load and between departments, and of meeting delivery dates.

While the present article is a unit in itself, it traces back to "Woolen-Mill Organization," which Mr. Martel wrote for the March, 1936, issue, and to "The Plant Engineer," which appeared in September, 1936, and in which Glenn H. Alberga took issue with Mr. Martel on some questions of organization.

A centralized plan for control of production has also been charted in Fig. 1. In this system, planning boards are arranged to show all the machines in each department in the order in which material is processed. These boards are in the office of the superintendent of operations (shown as planning). Boards to correspond with them are set up in each department. The superintendent of operations, with the help of the night superintendent and engineer, schedules production on these boards, in turn placing orders on the boards in the departments. The forms serve as inventories and as records on which to base costs. By this plan, control of production is carried out continuously, and a visual control is also established.

One of the boards is shown in Fig. 2. Orders for work to come up later are placed at the upper right corner of the board and moved to "work to come up first" as the time to schedule production on the machines arrives. As the work is scheduled on the machines, the cards are moved to the upper left part of the board, and then to "work finished" when the work leaves the machines. Boards are developed to fit existing conditions, and Fig. 3 shows how machines are laid out in departments where more than one operation is carried out.

Some of the more important factors which have to be considered in schedule production are shown in Fig. 4.

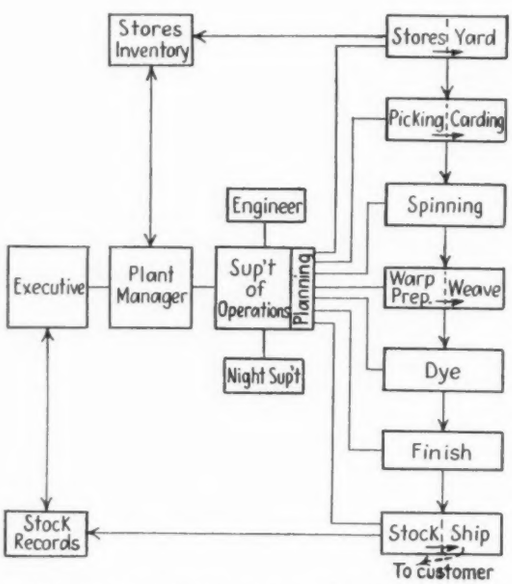


Fig. 1. Organization of a small woolen mill.

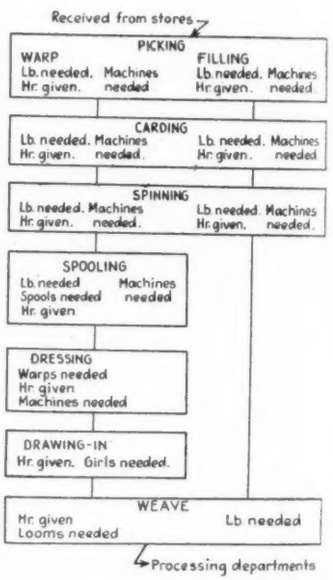


Fig. 4. Factors effecting production control.

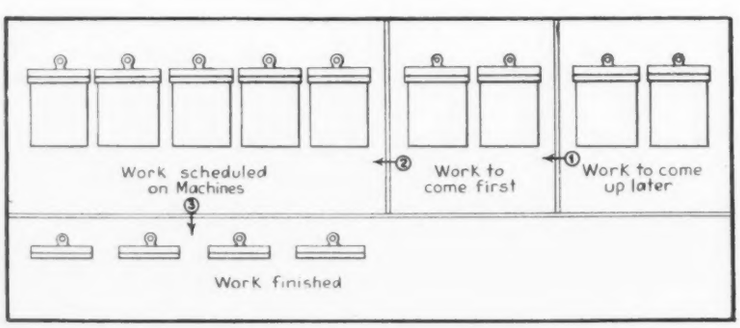


Fig. 2 Department planning board.

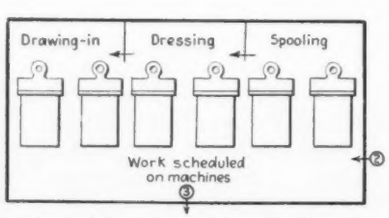


Fig. 3 (above). Section of planning board used in departments where more than one operation is carried out.

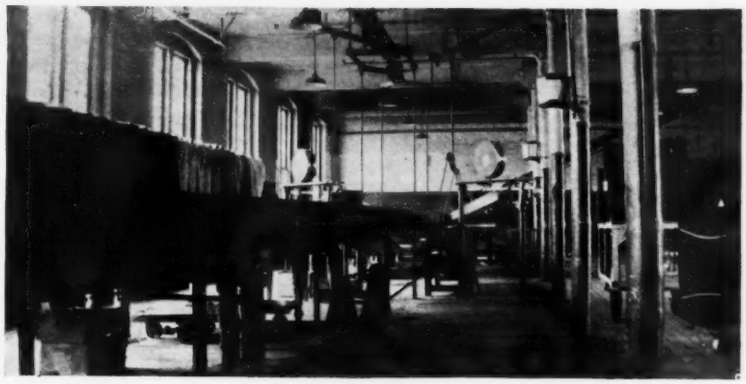


Fig. 1. Lower end of conveyor system, with scale for weighing bolts of cloth.

Conveyor Installation

Carries large worsted mill toward lower handling costs

By Francis A. Westbrook

SOME rather unusual features of construction are embodied in two long conveyors which have been installed recently in a well-known New England worsted mill. These conveyors, which are used for transportation of finished goods, have proved to be great labor savers. By eliminating manual handling of the goods, they also protect the cloth from soil and injury.

One of the conveyors starts at the machines where the cloth, after coming from the finishing department, is wound into bolts. This is a 24-in.-wide belt and travels in a trough with raised sides to prevent the bolts from slipping off. It extends the full length of one of the upper floors past a row of winding machines and close to them, so that a minimum of labor is involved in taking the bolts off the machines and placing them on the conveyor. The horizontal run on this floor is approximately 120 ft., the conveyor is supported at a height, about 20 in. above the floor, which is convenient for the operators. It then passes through the floor by means of a metal fire door with a fusible link, and continues at a 30° incline for another 20 ft. This portion of the run is straight and a single belt is used.

After passing through the floor, the conveyor is supported under the ceiling for a short horizontal run, makes a right-angle turn, and then descends through a second floor—also provided with a fire door—to the floor below. At this point there is another right-angle turn, consisting of a chute on the outer circumference and rollers on the inner side of the turn. The material travels by gravity around the turn and then passes on to a short section of belt conveyor which delivers it to a short stretch of roller conveyor, where the bolts tend to come to a stop.

At the end of these rollers, there is a weighing machine, shown in Fig. 1, with a top of similar rollers and at the same level as the conveyor, so that it is an easy matter to weigh each bolt as it comes along by pushing it on the scales. When it has been weighed, the bolt is pushed on to another section of belt conveyor, where men are stationed to take it off and place it on a truck. This weighing station is conveniently located with respect to the storage space for finished goods. There are push-button control stations at the points where the cloth is put on and taken off the conveyor, so that the conveyor can be stopped from either end and from several places along its run. It is obvious that this system of handling the goods by conveyor, instead of by trucks and elevators, saves a great deal of labor.

An equally large saving in labor is made by the other conveyor, shown in Fig. 2, which runs from the finished-stock room to the shipping department three floors below. This is a straight run through two floors at an angle of 30°. In this case, the belt is provided with wooden cross-strips to prevent the packages from sliding. A belt type of conveyor has been installed here instead of a chute, because the travel and delivery of the goods are under better control with the conveyor. There is a push-button control station at the receiving end in the shipping department, by means of which the arrival of packages can be halted by stopping the conveyor, if they are coming along faster than they can be handled readily. This, of course, would not be possible with a chute. There is also a push-button control station at the upper end of this conveyor line.

Because of the steep descent of the load, it was not necessary to install rollers for this conveyor. The belt simply slides along the bottom of the metal trough. On the return, the bottom of the belt is supported by the wooden strips, which slide along metal rails. The belt ends just below the second ceiling through which it passes, and from there to the invoicing table the packages pass down a chute.

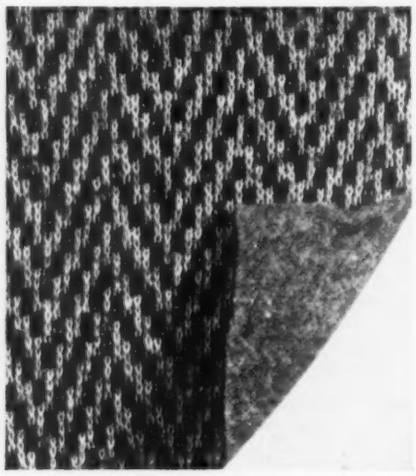
Cog-belt drives between the motors and the drive pulleys are used for both of these conveyors, in order to prevent slippage. This is important, because there is a great deal of stopping and starting of both systems, as the flow of goods is not continuous, and as it is necessary to control the arrival of units at the points where they are to be weighed or invoiced.

Both of the conveyors were supplied by Lamson Co., Syracuse, N. Y. Use of them has relieved elevator congestion to such an extent that if they were not available it would be necessary to have at least two more elevators with full-time attendants, not to mention the extra handling which would be involved.

Fig. 2. Conveyor from finished-stock room to shipping departments.

At Needles' Points . . .

Lancashire-Cahill debate on methods of laying out knit-pattern fields ends in this bloody duel



Fabric submitted by TEXTILE WORLD to Messrs. Cahill and Lancashire

This is the finale. Through recent issues (October, November, January, March, and June) J. B. Lancashire, English writer on knitting technology, and J. F. Cahill, American writer on the same subject, have debated the laying out of pattern fields for circular knitting. Since both gentlemen seem inexhaustible in their arguments for their favorite method, we have asked each of them to analyze a certain fabric. The results are published herewith, and we shall be glad to hear from readers as to which participant in this grim duel they consider the victor.

Mr. Lancashire's Analysis

THE sample submitted is cut from a backed fabric which has been knitted on a spring-needle machine of the loop-wheel type. As the finished fabric has 19 wales per inch, the machine is most probably 18-gage; i.e., it has 18 needles per 1½ circumferential inches or 12 needles per inch. Four feeds are incorporated in the machine; and at each feed three ends of the cotton yarn are supplied—viz, one for the backing, another to form binding loops, and a third to make face loops. At the second and fourth feeds the yarns supplied for the making of the binding and face loops are brown in color, while those supplied at the first and third feeds are white.

Color Effect

The effect in color which characterizes the face side of the fabric is obtained by mispressing certain needles at the second and fourth feeds, thereby producing tuck loops with the brown yarn. These tuck loops are hidden behind white loops knitted at the previous feed.

A draft of the color design is given on ruled paper in Fig. L1. Each horizontal line of squares represents the work of two feeds, a shaded square denoting two cleared loops, one of white yarn and one of brown yarn, and a blank square denoting a stitch comprising a held loop of white yarn and a tuck loop of brown yarn. (Since there are two ends of yarn knitted together at each feed, the cleared, tucked, and held loops are double loops in every case.) If the plain feeds are ignored, blank squares can be interpreted as tuck loops and shaded squares as cleared loops.

The design is developed in an area thirteen wales wide and six complete courses deep, a complete course being the combined work of two adjoining feeds. Thus, feeds 1 and 2 together make one complete course, while feeds 3 and 4 together make another. After passing two feeds, the second of which is a tuck feed, two ordinary loops are formed where there are shaded squares in the paper pattern, and one ordinary loop followed by a tuck loop where the blank squares occur.

The Design Field

Since there are six design courses to be knitted by two pairs of feeds, each pair is responsible for three of them, so that selections for three courses have to be made at both of the tucking feeds. The three complete design courses are built up side by side and extend over 39 needles laterally and over two rows of loops longitudinally. Feeds 1 and 3 are equipped with plain disks for closing the beards of all the needles, but cut pressers are used at feeds 2 and 4 to enable tucking to be done. The cut pressers engage with the needles, division by division; and where spaces occur a mispressing action takes place, resulting in the formation of tuck loops.

Examination of the fabric shows that the selection repeats in the brown rows after 39 loops have been raveled, proving conclusively that the pressers each contain 39, or a multiple of 39 divisions. On the basis of 18-gage needle spacing, pressers containing 39 divisions would be only just over 1 in. in diameter, even after making the necessary grooving allowance. Therefore, it is reasonable to assume that the pressers would contain 78 divisions, the pattern being built up twice around them in order to obtain disks of more convenient size.

In Fig. L1 the key area is inclosed by thickened lines and the pattern within this area is emphasized by the blocked-in squares denoting cleared stitches. There is a second area similarly inclosed on the left-hand side of the paper draft; and it will be noticed that this area, which contains exactly the same pattern as the key area but with shaded instead of blocked-in squares, occurs two horizontal rows below the latter, thus indicating that the design falls two complete courses towards the left—i.e., in the direction

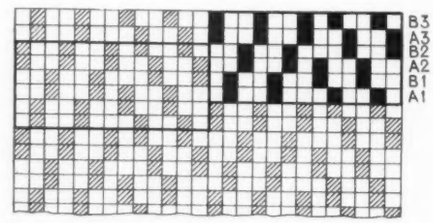


Fig. L1. Lancashire's analysis

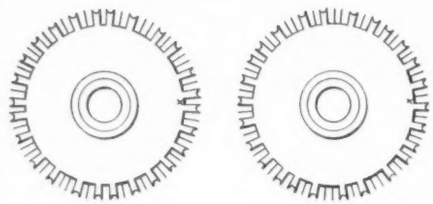


Fig. L2. Arrangement of pressers

of knitting if the needle cylinder revolves counterclockwise, as is most likely.

Number of Design Columns

With two pairs of feeds, each pair is responsible for three pattern courses; and since the first course made by the first pair is reproduced in the adjoining column on the right-hand side after one revolution of the machine, the number of design columns is one more than a multiple of 3 if the needle cylinder revolves counterclockwise, and one less than a multiple of 3 if the needle cylinder revolves clockwise. The former case is satisfied by an 18-gage machine having 754 needles in a 20-in. cylinder. The pattern width being 13 gives $754 \div 13 = 58$ design columns and $58 = (19 \times 3) + 1$; i.e., unity more than a multiple of 3.

In one revolution of the needle cylinder each cut presser has gone around $754 \div 78 = 9\frac{2}{3}$ times, thereby making the necessary selections for the design $19\frac{1}{3}$ times, the fraction being a repeat of the first pattern course. The second pattern course commences the next circuit of loops, and so it is knitted above the first pattern course which commenced the previous circuit of loops made by the same pair of feeds. Meanwhile, however, the other pair of feeds working independently have sandwiched a circuit of loops in between, so that the second pattern course knitted by feeds 1 and 2 is two courses above the first course knitted by the same feeds in the same design column. Similarly, the third pattern course is two courses above the second pattern course.

In Fig. L1 the pattern courses developed by the first and second pairs of feeds are lettered *A* and *B* respectively. The presser at the second feed is responsible for the selections for pattern courses *A*1, *A*2 and *A*3, and the presser at the fourth feed is responsible for the selections for pattern courses *B*1, *B*2 and *B*3. Fig. L2 shows the arrangement of solid divisions and spaces in the two pressers, the left-hand one belonging to the second feed and the right-hand one to the fourth feed. The pattern rows are read off from the paper draft in numerical order, taking the squares in succession from right to left and working around the disks in a counterclockwise direction. Divisions are left solid where the squares are shaded or blocked-in and punched out where the squares are blank. In order that correct reproduction will be obtained, the starting divisions, which are marked with crosses, must be engaged with the same needle during one revolution of the cylinder.

Number of Needles

The number of needles in the machine is not definitely known; but, if the cylinder revolves counterclockwise, the number is of the form 13 $(3n + 1)$, n being any integer. Possible numbers include 676, 832, 910, 988, as well as 754. On the other hand, if the cylinder revolves clockwise, then the number is of the form 13 $(3n - 1)$. Neither the number of needles nor the direction of rotation of the cylinder affects the arrangement of solid divisions and spaces in cut pressers, and no important modifications are involved if the design area is considered to be 26 wales wide and 6 courses deep, with a rise of two full courses toward the left.

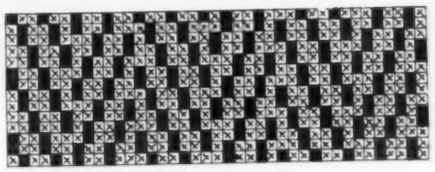


Fig. C1. Result of raveling

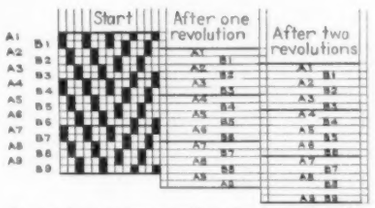

Start
After one revolution
After two revolutions
As seen from back or outside on loop-wheel machine.
Plus one division on machine turning to right (counterclockwise).
Minus one division on machine turning to left (clockwise).
Heavy horizontal lines show design fields.
Light horizontal lines show presser division blocks.
Layout for presser of 9 division x 13=117

Fig. C2. Mr. Cahill's presser diagram

Mr. Cahill's Analysis

THE fabric sent me for analysis of design and presser layout presented a rather interesting study. It proved to be a fleeced fabric produced on a loop wheel spring-needle machine. A little preliminary raveling showed a full-fleece, double-plush construction—full-fleece because the backing yarn is laid in at all feeds, and double-plush because the backing yarn is held between a face thread and a binding thread. Being aware that even a large cylinder is rather crowded with four backing feeds (though I have occasionally used six feeds of full-fleece), I based my analysis on four feeds.

My procedure was first to determine, as nearly as possible, the gage or number of needles per inch for the purpose of estimating a fair size for pressers. A careful count showed 17 or 18 wales per inch, which indicated 22- or 24-gage Tompkins or 14- to 16-needle Crane, and a horizontal repeat of 13 wales or needles. Marking two or three wales on the horizontal repeat lines, I laid the fabric face side up on a board, held down by a movable clamp, preparatory to raveling.

After preparing a sheet of squared paper by ruling vertical columns and inclosing each thirteenth vertical row of squares between two lines, I proceeded to ravel for location of stitches and floats. Whether the loop edge of a knitted fabric is considered the top or the bottom is of no consequence, for the fact remains that the last course knitted is the first course raveled at any point in the fabric.

As the raveling plainly indicated that the white courses in the fabric were knit with plain pressers on alternate feeds, I confined the analysis for presser layout to the dark courses. Beginning at the right side of the fabric (lying face upward) for raveling and at the left side of the bottom of the paper to record the effect of raveling, I obtained the location of stitches and floats as they would appear on the back or outside of the fabric on the machine and in the proper order for the taking off of the presser diagrams.

Record on Squared Paper

The record, as transferred to squared paper (with stitches shown by filled squares and floats shown by blank squares), showed four feeds (two design feeds) with a horizontal repeat of thirteen needles and a vertical repeat of six design courses—indicating six presser divisions. See Fig. C1. As there are two cut pressers, it is obvious that six presser divisions could not very well be divided between two pressers (39 needles each) and produce pressers large enough to work satisfactorily on the machine.

But the circumference of pressers need not necessarily be confined to the number of presser divisions contained in one design field. They may take in as many full design fields (vertically disposed) as are required to produce a presser of usable size. In this case any multiple of six design courses divided equally between two pressers (as 12, 18, 24, etc.) might be used.

In the presser diagram shown, Fig. C2, it can be very readily seen that each design field of six courses contains all the elements of the entire design, that any one may be exchanged for any other one without at all affecting the continuity of the design, and that the pressers may contain any multiple of three presser divisions each and still produce the design.

However, given a cylinder with a definite number of needles, it would be a much easier matter to determine how nearly this design might be approximated or duplicated than to state exactly what size pressers were used and how many needles were in the cylinder on which this sample was made.

Half-Hose Fixing

Advice on replacing needles, oiling needles and sinkers, maintaining sizes, and moving machines

By I. C. Moore

REPLACING bad needles on the finer-gage machines is not always as simple as it looks. Very often it is hard to find a bad needle that is causing trouble. The latch may not be closing over the hook as it should, and a defective needle like this looks just like any other needle when the latch is open. Yet, if the latch doesn't cover the hook, the latter will catch the loop and break it as the needle lowers to cast off the stitch. In cases like this, some fixers will remove two or three needles to be sure of getting the bad one, thus throwing away three for one. Needles are quite an item in the knitting-room budget; therefore it is quite obvious that this practice soon runs into money. When a defective needle can't be readily located, it will show up if the fixer will turn the machine by hand, observing how it behaves when it comes to the cams.

In putting new needles in the cylinder slots, some fixers go to extremes—as we Americans are prone to do—and bend the needles too much. This makes them run too tight. No doubt there is much unnecessary power and lubrication consumed and unnatural wear put on the needles and cams by thoughtless fixers who put too much friction on the needles.

Oiling Practice

Oiling is sometimes done by a helper, but there are many fixers who prefer to do their own oiling, especially of the needles and sinkers. If the needles have the right amount of friction on them (just enough to keep them in place without bouncing or backsliding), they will not require much oil and will need only a light oil at that. I am not in favor of mixing graphite with oil for lubricating needles. It stains the goods in process. Graphite is an excellent lubricant, of course, but more suitable for heavy machinery.

Needles and sinkers, in my opinion, should be oiled lightly once every 8 hr. The simplest and cleverest device for oiling knitting-machine needles I have ever seen is an ordinary "pop" bottle with a cotton rope about 8 in. long run through the neck for a wick. The rope absorbs the oil in the bottle by capillary attraction, and when the end, which projects from the bottle, is held against the revolving needles, they are well greased but not flooded. The only objection to this bottle-wick oiler is that the wick must be removed for the oil to be put in, and this is not so easy. I have therefore conceived the idea of using a 1-quart jar of the character employed at filling stations (see Fig. 1). With this the spout, which holds the wick, is screwed off to permit refilling of the jar.

The advantage of this homemade wick oiler is obvious: There is no danger of flooding the needles with oil to be absorbed by the goods in process, as is likely to be the case when the oil is applied with a brush.

Maintaining Sizes

Keeping half-hose on size is very important. A man can't justly call himself a fixer until he turns off hosiery fit to loop and fit to board. Some mill men think one man should do all the sizing, as no two men size alike. Personally, I do not share this opinion. Sometimes the slightest adjustment to a machine will throw the size off. If the fixer is not responsible for the uniformity of sizes, why should he worry or bother to tell the man who does the sizing, every time he adjusts a machine?

FIG. 1 (at left) For oiling needles and sinkers

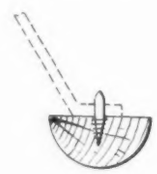


FIG. 2 (above) New use for croquet ball

A knowledge of the reaction of the different yarns used in the sock to dyeing is necessary to good sizing. He should also notice the style of forms used in the boarding room—whether wide or narrow—and shorten or lengthen the gore accordingly. The looper course should likewise be watched, because, if it is too large, it will cause the knives on the looper to cut the loops and, if it is not distinct enough or only extends part the way around, the looper operative can't do her best work. In well-managed knitting rooms, the goods from each machine are sized regularly twice a day. It would not be a bad idea for the fixer to visit the loopers occasionally, not for sentimental reasons, but strictly for business—to see if he is turning out hosiery fit to loop.

Although pattern changing is not always considered a part of fixing, in a great many half-hose mills it is so considered—or at least the fixer must help. In making fancy half-hose, about the time a section of machines gets straight on one pattern, out comes a new design requiring a lot of tedious work setting up patterns.

Moving Machines

This very often necessitates taking machines to the workbench so the changer can tackle the pattern drum undisturbed. To move the machines, either rollers or skids are placed under each of the four legs to prevent straining or disturbing of the settings. At our mill we use wooden skids we invented ourselves (Fig. 2).

These skids are made of large-size croquet balls. Two of these are sawed in half across the grain, making four hemispheres. A screw is inserted in each one and the head ground off so it will pass through the screw hole of the leg of the machine. When a machine is to be moved, all that is necessary is to tilt it enough to permit two of these skids to be placed under the two front legs. Then the back ones are attended to in the same way, and you are ready to go. When these skids are not in use, they are wrapped in oily waste. The wood absorbs the oil, and that keeps them lubricated.

One of the fixer's principal responsibilities where plated hose is manufactured is the maintenance of clean plating. The right amount of tension on the yarn and the proper length of stitch are two things that will help to insure good plating. Experience alone, however, can tell the fixer how much tension to put on the yarn and how loose to run his stitch.

The best knitting-machine fixer is the one who watches the little things. Those fixers who do this have little work to do. A superintendent of a large mill said to me not long ago, "I judge my fixers by the production and quality of work that comes from their sections; I am not interested in how little they work."

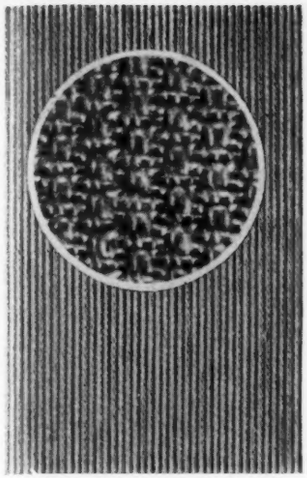
A previous article by Mr. Moore on the fixing of half-hose machines appeared in the July TEXTILE WORLD, *page 75.*

Staple Cotton Fabrics

By John Hoye

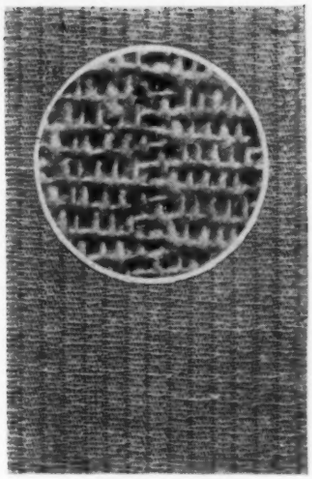
Fabric Technician with W. Harris Thurston, New York

This is the twentieth article of the series on the constructions, finishes, and uses of staple cotton fabrics which started in the January, 1936, issue.



Reeves Bros., Inc.

Combed Piqué (Narrow Wale)—38", 176x100, 3.50 yd., single yarns



Southeastern Cottons, Inc.

Carded Piqué (Wide Wale) —37", 104x72, 3.80 yd.

Piqué

PIQUÉS have a raised-cord effect which can be made to run either in the warp or the filling direction. Domestic piqués usually have cords which run warpwise. These cords are also known as wales. Both carded and combed qualities are made.

In the better qualities, to obtain the raised-cord effect, heavy warp yarns from a separate warp beam, known as backing or stuffing ends, are used along the back of the cloth only. These heavy warp ends are bound or caught at intervals of about four picks by interlacing two picks with them. Finer warp yarns forming the cord effect on the face are woven over the heavy backing yarns. Because of this manner of weaving, it is also possible to weave a large number of warp ends per inch. Most piqués, however, are made with carded yarns and without backing ends, the wale or cord effect being formed by weave only. The wales or cords are made narrow, wide, and in varying widths. Colored-yarn cords or wales are also made. Piqués require six or more harnesses. They are sometimes made with figured effects—usually on a jacquard loom.

Finishes used: Usually mercerized and bleached, dyed, or printed; also slightly napped or brushed to give suede effects; often preshrunk.

Uses: Summer wear for women and children, dress shirts, vests, neckwear, gowns, infants' coats, hats, etc.

Widths: Usually 37 or 38 in.; also 28 and 36½ in.

Constructions: 72x48 to 176x116.

Yarns: Carded 28s to 40s.

Combed 50s to 80s (20s and lighter are used for the stuffing ends).

Examples of piqués:

Carded			*Combed*		
37"	104x72	3.80	38"	176x116	3.15
36"	92x64	4.40	38"	176x100	3.50
38"	116x84	3.25	38"	165x 88	2.90
37"	72x48	5.80	38"	126x 72	3.25
37"	88x64	4.40	37"	96x 86	3.15

Bedford Cord

BEDFORD CORD is a corded fabric similar to piqué in construction and appearance; but it is made with coarser yarns, which render it much heavier. Many of the heavier piqués are called Bedford cords. The cords run warpwise, and the yarns are always carded. In the better qualities, two-ply yarns are used in the warp to form the face, and either heavy-single or ply yarns are used as the backing or stuffing ends along the back of the cloth. The filling is sometimes coarse, heavy yarn which can be easily raised, if necessary, in the finishing operations, to give a good heavy nap. Staple narrow or wide wales are made, as well as fancy woven-cord effects. In the cheaper qualities, single yarns are used. These are usually made without stuffing ends, the cord or wale effect being formed by the weave only. Six or more harnesses are used in weaving. In the better qualities, two or more warp beams are used to take care of the different take-up of the warp ends used on the face and on the back. Some Bedford cords are made with a worsted face, or of all worsted yarns.

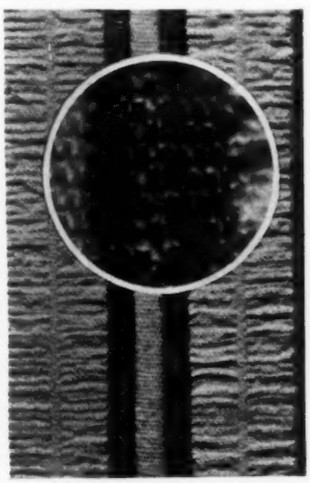
Finishes used: Usually sulphur dyed in gray, navy, or khaki shades, and plain finished; may be napped on back; bleached and printed with trousering patterns; also dyed in shades suitable for drapery and upholstery purposes.

Uses: Riding habits, breeches, uniforms, hats, shirts, knickers, soft collars, upholstery covers for car interiors, chairs, couches, drapes, etc.

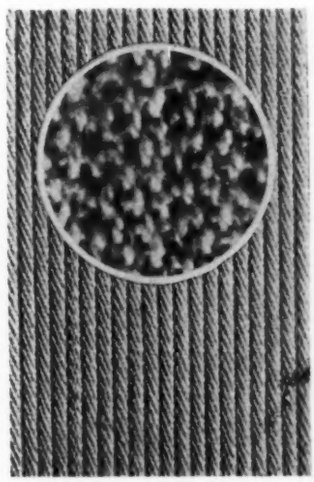
Warp yarns: 12s to 16s single, 20/2 to 40/2 ply.

Filling yarns: 12s to 20s single.

39"	96x54	1.50
39"	80x52	2.10
50"	80x56	.95
50"	96x54	1.27
54"	72x46	1.38
30"	142x60	1.83



Seersucker-Piqué —Colored-yarn piqué stripes on seersucker



Bedford Cord — 30", 142x60, 1.83 yd., two-ply warp, single filling yarns

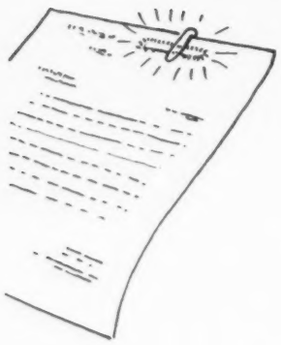
Note: In the June issue the word "momie" was spelled "monie" in error.

—MIDSUMMER MADNESS—

(A psychopathic analysis)

By Julius B. Goldberg

Memo from the Selling Department to the Mill



Attached please find,
Beneath the clip,
A swatch of fabric—
Just an eighth-inch strip.

Analysis rush
By wire or phone—
The fate of our mill
Rests on this alone!

Be sure to include
Complete construction.
But RETURN THE SAMPLE
WITHOUT DESTRUCTION!

Tell us the count,
And tell us the weight,
Give all the facts
And get them straight!

What are the yarns,
The make and price?
Percentage of wool,
Please check this twice!

Now what's the dyestuff?
And what's the strength?
And what's the thickness?
And what's the length?

And what's the cost?
And what's the sell?
And what's the profit,
If all goes well?

We must know now,
Everything, in fact,
But be sure the sample
Is kept INTACT!

Memo from the Mill to the Selling Department

Now here's the count—
Forty-one, fifty-eight;
Forty inches the width
Three fifty the weight.

The yarns are twenties,
Rayon staple and wool,
Dyed with fast colors
And finished quite full.

The dyer's in Jersey,
The gray mill's in Mass.,
The weaver, a cute
Little red-headed lass.

The pulp for the rayon
Came from trees in Maine,
That were cut to the ground
By a man named Payne.

The wool in the yarn—
Eight percent the amount—
Came from a black sheep
That was no account.

The sample you clipped
From a young woman's coat,
While taking her out
In your twenty foot boat.

From the size of the swatch
That's all we can tell,
But if you don't like it,
You can—still go and sell!

EDITOR'S NOTE: The above was wafted into our office with the snows of last winter. It is finally seeing the light of day in mid-summer—a far more appropriate time anyway. During the intervening months it has been the subject of a controversy among members of the TEXTILE WORLD staff which made the Supreme Court fight look like a Sunday-School debate. Finally, in desperation, we decided to publish it—and let the readers decide. The ratio between bricks and bouquets received during the first month after publication will settle the issue—and Congress can go home. Let us have your vote.

Textile Nomographs

Expedite routine calculations in mill and laboratory

By

Leonard Shapiro,

Chemist
Interlaken Mills, Dye Works

and

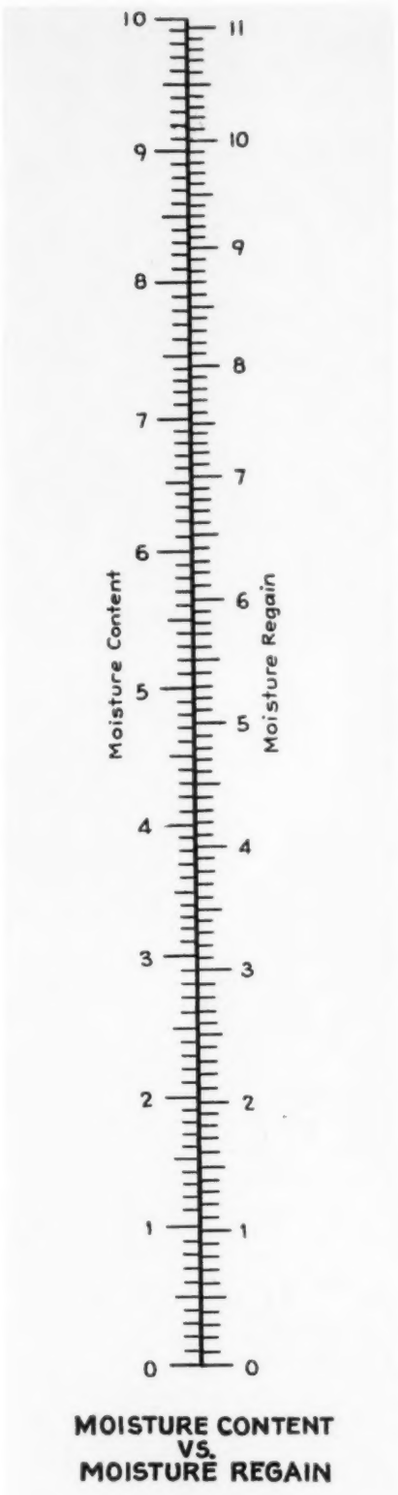
Joseph M. Durand,

Physical Laboratory
Interlaken Mills, Harris Mill

THE advantages of nomographic charts (or alignment charts) for routine computations have been aptly summarized by Prof. E. R. Schwarz, in an article in *Textile Research*, as follows: (1) It (the nomograph) requires no computation, nor does it necessitate the use of pen, pencil, or paper. (2) Unlike the slide rule, it requires little skill or training for its operation. (3) There is no need for estimating or interpolating between tables or graphs, especially in the case of three variables. (4) The chart may be constructed so as to give the desired number of significant figures in the answer, avoiding erroneous accuracy often obtained when calculations are made longhand.

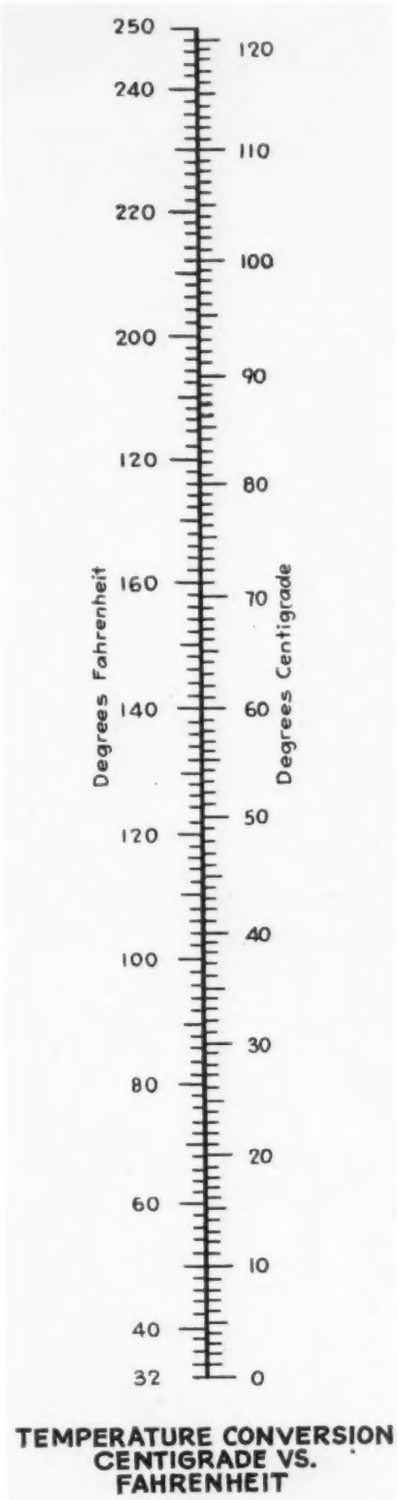
When computations are carried out with pencil and paper, the man without special mathematical training, knowing nothing about the significance of figures, will almost invariably carry out his result to too great a degree of accuracy. This involves much waste of time and usually gives misleading results. Use of a slide rule or nomograph automatically gives the same degree of accuracy that exists in the scale calibrations.

In this article are presented six nomographs which were developed by the authors and which have proved useful in making rapid routine calculations in the mill and laboratory. Two appear on this page and the remainder on the three following pages.



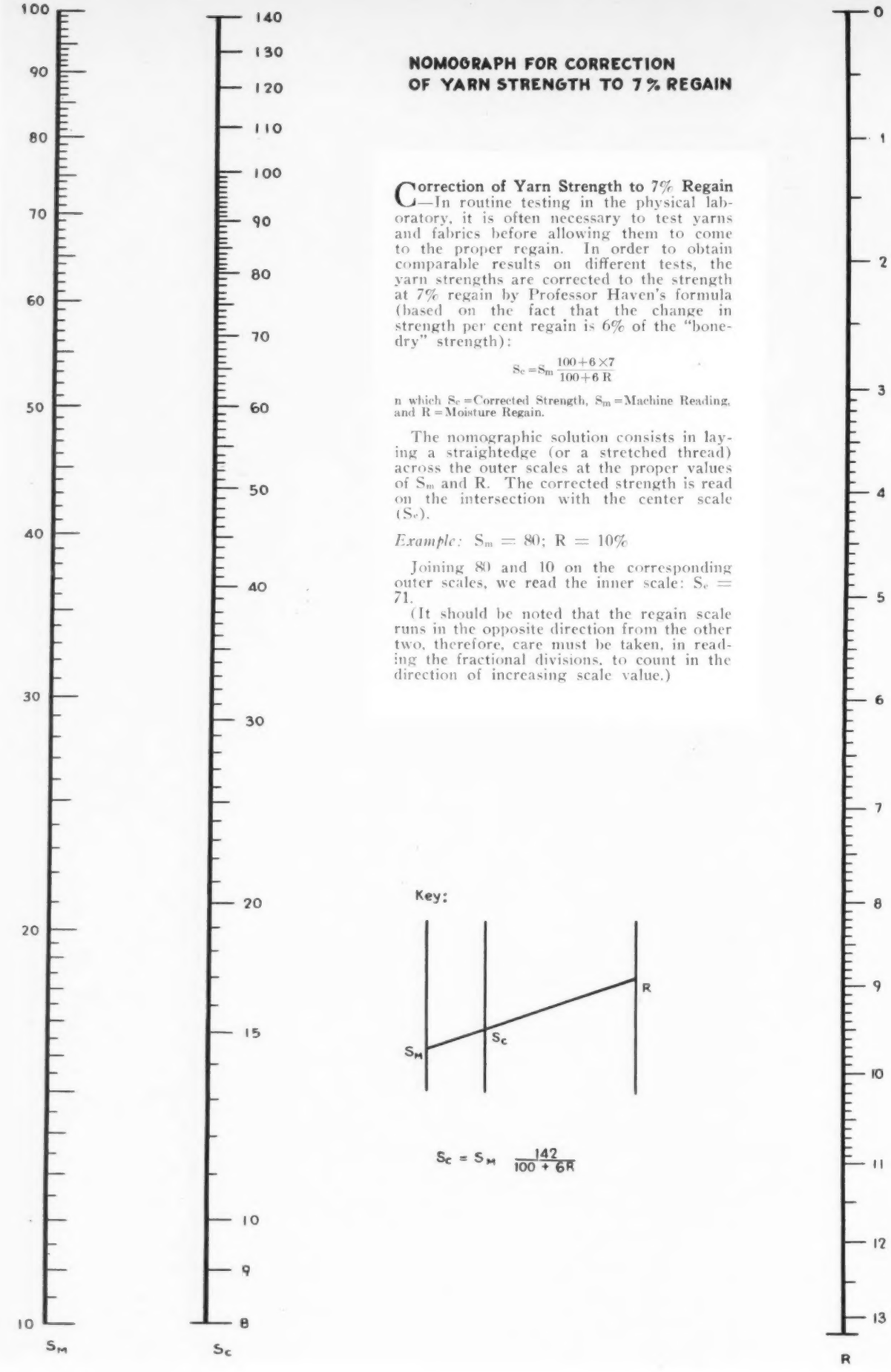
MOISTURE CONTENT VS. MOISTURE REGAIN

CONVERSION of Moisture Content to Moisture Regain—Conversion from moisture content (calculated on wet basis) to moisture regain (calculated on dry basis) is made by means of the equations: $M = R \div (100 + R)$ and $R = 100\ M \div (100 - M)$, in which R = percent moisture regain, and M = percent moisture content. A single-scale nomograph has been constructed for this purpose. (This is similar to a nomograph published by Prof. E. R. Schwarz in TEXTILE WORLD in 1929, except that, in this case, moisture content has been represented as a uniform scale.)



TEMPERATURE CONVERSION CENTIGRADE VS. FAHRENHEIT

CONVERSION of Degrees Centigrade to Degrees Fahrenheit—In this country, temperature is generally expressed in degrees Fahrenheit; however, in all scientific work, temperature is expressed in degrees Centigrade. The conversion from one system to the other is obtained by means of the equations: $°C = 5\ (°F - 32) \div 9$ and $°F = (9\ C \div 5) + 32$. The simple single-scale nomograph allows conversion to be made from one system to the other at a glance. The scale has been graduated from 32° F. to 250° F. to cover the range of temperatures ordinarily encountered in the plant.



NOMOGRAPH FOR CORRECTION OF YARN STRENGTH TO 7% REGAIN

Correction of Yarn Strength to 7% Regain—In routine testing in the physical laboratory, it is often necessary to test yarns and fabrics before allowing them to come to the proper regain. In order to obtain comparable results on different tests, the yarn strengths are corrected to the strength at 7% regain by Professor Haven's formula (based on the fact that the change in strength per cent regain is 6% of the "bone-dry" strength):

$$S_c = S_m \frac{100+6\times7}{100+6\,R}$$

n which S_c = Corrected Strength, S_m = Machine Reading, and R = Moisture Regain.

The nomographic solution consists in laying a straightedge (or a stretched thread) across the outer scales at the proper values of S_m and R. The corrected strength is read on the intersection with the center scale (S_c).

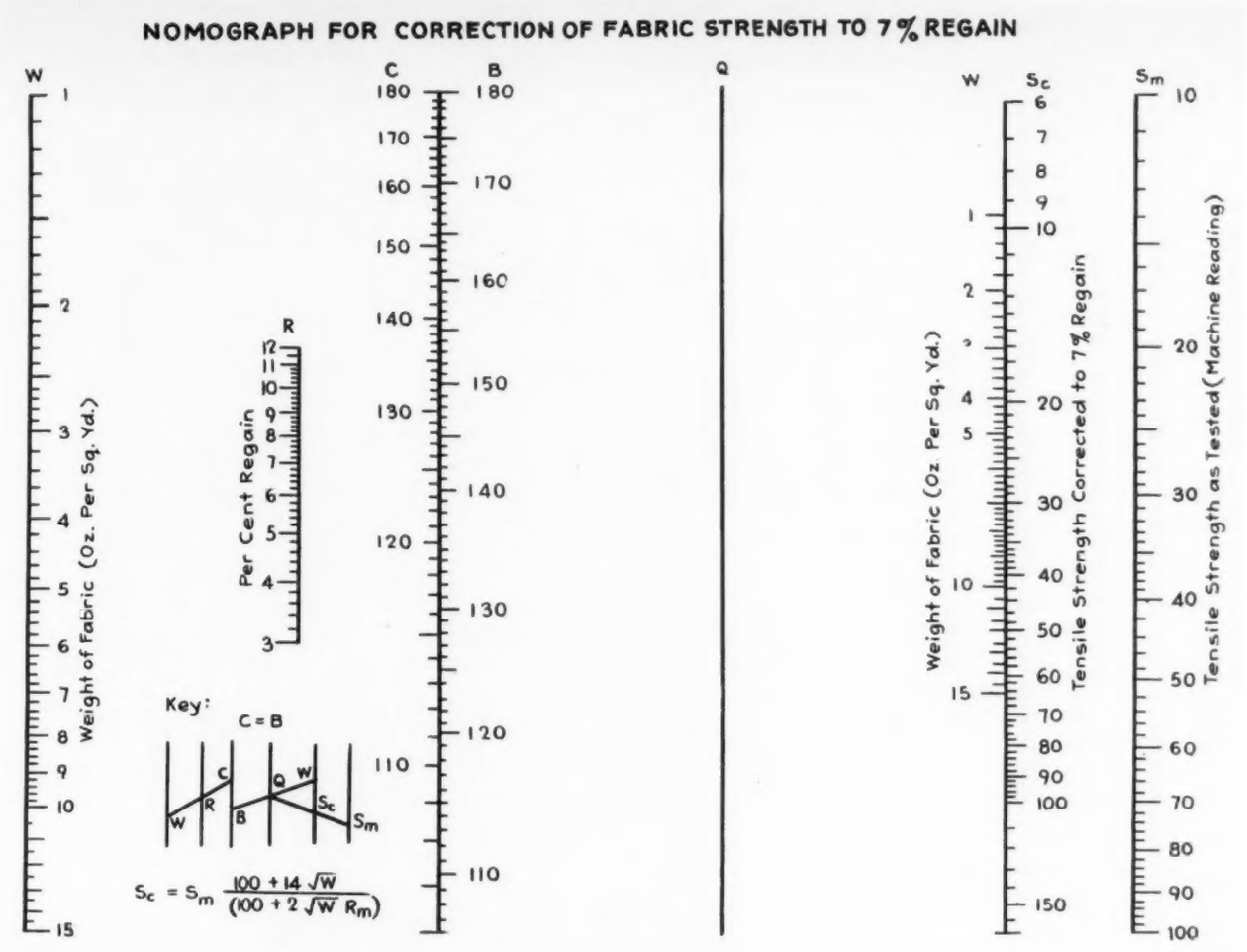
Example: $S_m = 80$; $R = 10\%$

Joining 80 and 10 on the corresponding outer scales, we read the inner scale: $S_c = 71$.

(It should be noted that the regain scale runs in the opposite direction from the other two, therefore, care must be taken, in reading the fractional divisions, to count in the direction of increasing scale value.)

Key:

$$S_c = S_M \frac{142}{100+6R}$$



Correction of Fabric Strengths for Regain—It is often necessary to make routine strength tests without waiting for the laboratory to come to the proper conditions. If the moisture regain is determined simultaneously, the strength may be corrected to any desired regain by the use of Haven's formula. Thus, for example, the correction to 7% regain would be accomplished by the formula:

$$S_c = S_m \times \frac{100+7\times r}{100+r\times R}$$

in which S_c = Corrected Strength, S_m = Machine Reading, r = Rate (% of dry strength per % regain), and R = Regain.

However, it is necessary to determine the rate, r, for each fabric in order to apply this equation.

For small changes in regain, it is not necessary to know the value of this rate very accurately. Thus, Haven subdivides all fabrics roughly into four classes by weight, using a nominal regain rate for each class.

Prof. E. R. Schwarz has derived the relationship $r = 2\sqrt{W}$ (where W = Square Yard Weight). This is an approximation which should be slightly better than using only four subdivisions. The correction equation then is:

$$S_c = S_m \frac{100+14\sqrt{w}}{100+2r\sqrt{w}}$$

It should be noted that two approximations are used in deriving this equation: (1) It is assumed that the relationship is linear between strength and regain in the derivation of Haven's equation. (2) The relationship derived by Schwarz between weight and the correction rate is only an approximation.

An error of 1 or 2% in the corrected strength should not be very serious, since the experimental errors in textile testing usually amount to this much.

The accompanying nomograph has been constructed to facilitate the correction of strengths to 7% regain. It is a simplification of a nomograph by Professor Schwarz. Since all corrections have been made to 7%, it has been possible to dispense with several scales. The range of variables has been adjusted to give scales easy to read over the range of conditions ordinarily encountered in testing light- and medium-weight fabrics. To compare the strengths of two fabrics tested under different conditions, it is only necessary to correct both to 7%.

As an example, let us take a 2.15-oz. fabric having a breaking strength of 34.6 lb. at 5.7% regain:

1. The fabric weight, 2.15 oz., is located on the left-hand scale, and a line is drawn through the per cent regain, 5.7%, to the C scale, obtaining a value of 116.5.

2. This value, 116.5, is then located on the B scale and joined again with the second fabric weight scale at 2.15 oz. The intersection of this line with the Q scale is marked.

3. A line is drawn connecting this turning-point on the Q scale with the breaking-strength, 34.6 lb., on scale S_m.

The corrected strength, 35.2 lb., is read on the S_c scale.

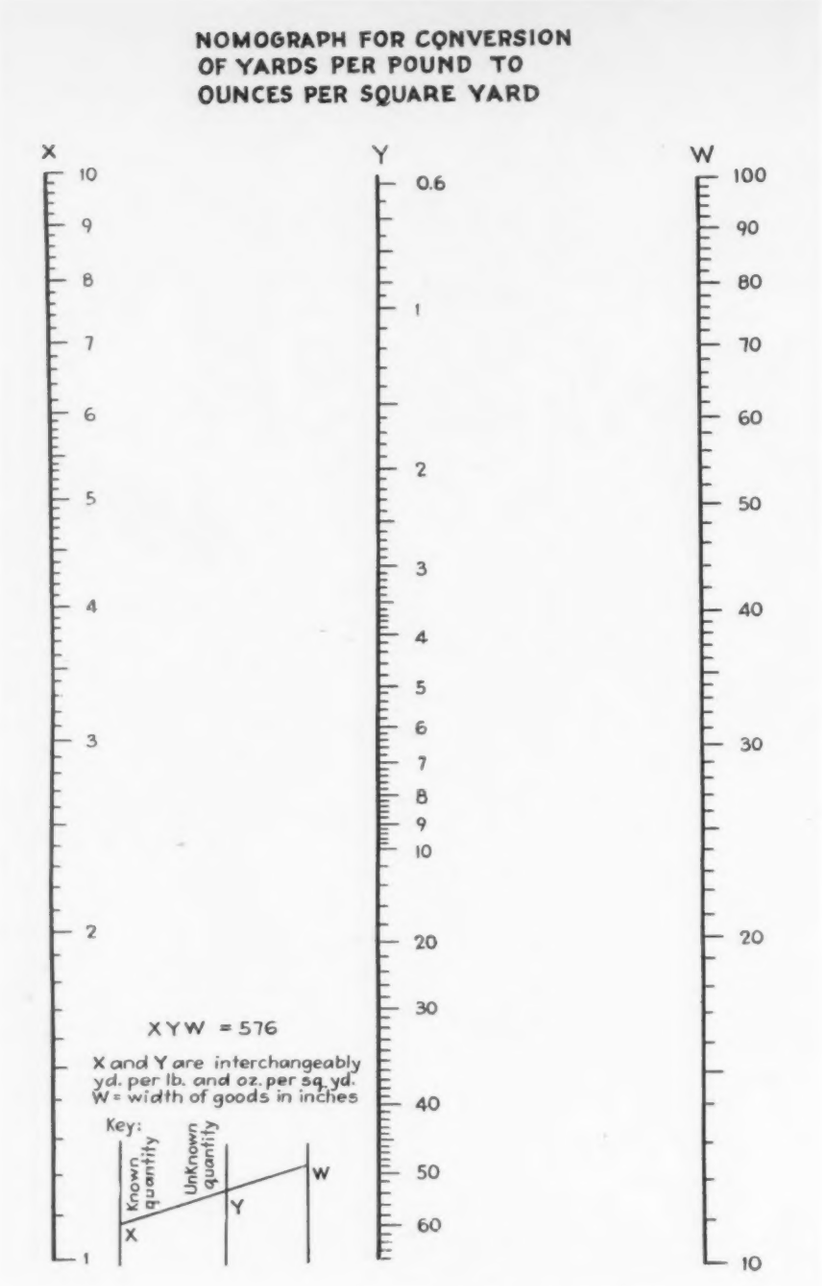
Confirmation of the accuracy of the nomograph was obtained experimentally, as follows:

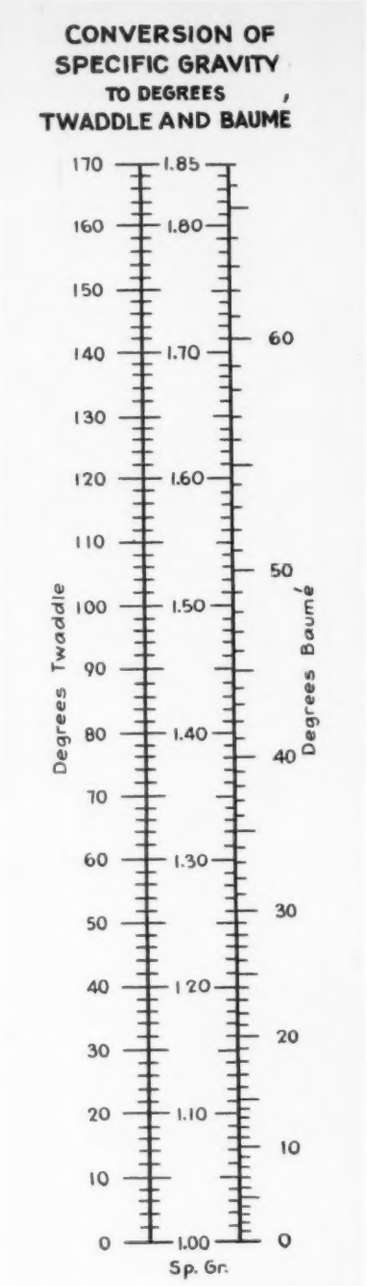
Three grades of goods were selected, and tested under each of three conditions: (1) at 65% relative humidity; (2) at 45% relative humidity; (3) at 80% relative humidity.

Each test consisted of five 1-in. strip breaks in the warp and five in the filling. The five breaks in each case were averaged, and corrected, by means of the nomograph, to 7% regain. The three sets of tests for each fabric should then coincide within the limits of error.

Actually, the corrected values come very close in nearly every case, in the following tabulation, as indicated by the closeness of the three corrected values in each set of tests.

Style	Wght.	Regain	Strgth.	Error	Nomographic Correction
X	2.15	5.7	34.6	.5	35.2
Warp		6.9	35.6	.5	35.2
		11.5	36.0	.4	32.0
X	2.15	5.7	15.4	.3	15.7
Fill		6.9	15.5	.5	15.4
		11.5	17.7	.5	16.0
E	2.72	5.9	42.7	1.0	44.0
Warp		7.4	43.7	.8	43.0
		11.1	48.7	.6	43.0
E	2.72	5.9	25.4	.5	26.0
Fill		7.4	26.8	.1	26.0
		11.1	30.0	.2	26.8
AB	9.26	5.7	101.3	2.9	106.0
Warp		7.6	108.9	1.4	105.0
		11.3	119.6	1.0	100.0
AB	9.26	5.7	99.4	.6	104.0
Fill		7.6	106.3	1.5	104.0
		11.3	122.8	1.5	104.0





Conversion of Yards per Pound to Ounces per Square Yard—In current practice the weight of fabrics is variously expressed as yards per pound or ounces per square yard, and it is often necessary to convert from one to the other. The formula derived for the purpose is:

$x \cdot y \cdot w = 576$ in which x = yd. per lb., y = oz. per sq. yd., and w = width of fabric in inches.

In the equation, x, y, and w are interchangeable, so that, in using the nomograph, if any two variables are located on the two outer scales, the third variable is read on the inner scale. In practice, it is advisable to locate the unknown quantity on scale X, connect this point with the point corresponding to the width on scale W, read the answer on scale Y.

Example 1: oz. per sq. yd = 4.5; width = 42 in.

Connecting 4.5 on the X scale with 42 on the W scale, the result is read on the Y scale: yd. per lb. = 3.1.

Example 2: yd. per lb. = 4.5; width 42 in.

The same procedure is followed: connect 4.5 on the X scale with 42 on the W scale and read the answer (this time in oz. per sq. yd.) on the Y scale: Y = 3.1 oz. per sq. yd.

(If weights greater than ten, or less than one, are used, the decimal point may be moved one place to the right or left to make the figure fall on th X scale, but the decimal point in the answer on the Y scale must be moved one place in the same direction;—thus, for 0.45 oz. in the above example, use the values 4.5 on the X scale, obtaining 3.1 on the Y scale. The decimal place in the answer must then be moved one place to the right, giving 31 yd. per lb.)

CONVERSION of Specific Gravity to Degrees Twaddle and Degrees Baumé—Specific gravity is expressed in various units, depending on the particular usage. Thus, concentration of sulphuric acid in a storage battery is conventionally expressed as specific gravity; in commercial practice, however, it is generally measured in degrees Baumé (abbreviated °Bé)— concentrated sulphuric acid is 66° Bé. Concentrations of caustic soda solutions, on the other hand, are generally measured in degrees Twaddle (abbreviated °Tw.).

Since tables for determining the composition or properties of solutions are likely to be expressed in any of these three units, it is convenient to be able to convert rapidly from one specific gravity scale to another. For the relationship between degrees Twaddle and specific gravity, the equation is: Sp. Gr. = 1 + 0.005 × °Tw. For conversion from Baumé to specify gravity (for liquids heavier than water at 60° F.): °Bé. = 145 — (145 ÷ Sp. Gr.).

In the nomograph, specific gravity is read on the inner scales and the corresponding Baumé or Twaddle readings on the outer scales. It is a simple matter also to convert from the Twaddle scale to the Baumé scale.

ADVERTISING PAGES REMOVED

The Overseers Corner

The credit union offers a solution to the problems of

Saving and Borrowing

By Lydia A. Schwellenberg

THE average overseer and the average worker want to save money, but for many there also come times when it is necessary to borrow. A credit union, set up and operated by the employees themselves, is an answer. So firmly convinced are many that credit unions fill a social need that they give of their own time and effort to spread the movement. Any group interested in setting up a union may secure—without obligation—information and assistance from the Credit Union National Association, 142 East Gilman St., Madison, Wis., or from a State league.—EDITOR.

A CREDIT union is a cooperative society organized under a Federal or State law (a few States lack laws) for the twofold purpose of supplying the members of the group with a plan of systematic saving, and of making it possible thereby for them to take care of their own short-term credit problems at a reasonable rate. This encourages thrift by providing a safe, convenient and attractive medium for the investment of the savings of its members. It promotes industry by enabling its members to borrow for productive and other beneficial purposes, and it eliminates usury by providing its members, when in urgent need, with a source of credit at a reasonable cost.

The qualifications for membership in a credit union are that the member be in a certain group (in this case an employee of a mill), and have a good character. In some States as few as seven may start and organize, and no State requires more than twenty signatures. In reality, all a credit union means is that a group of people pool their savings so that they may be able to borrow in time of need.

The capital of a credit union consists of the funds paid in upon shares by members and unpaid dividends credited thereon. It is desirable to fix a low par value for shares, so that no eligible person shall be deprived of the full privileges of membership. A par value of $5 is recommended. Members should, however, be encouraged to purchase from time to time as many shares as they can afford. It is important to provide for payment on account of shares in weekly or monthly instalments, say 25c per share per week, especially if the par value of the shares exceeds $5. There should be no limit to the issuance of shares, in order that new members may be admitted at any time and that old members may have an opportunity to buy additional shares.

Organization

There are a few fundamental rules, and while they vary somewhat with minor points in State credit-union laws, yet these rules are quite uniform for the various States. In practically every State there are organization papers which are forwarded to some supervisory authority and which constitute the application for a charter. When the application is granted and the petitioners are notified of that fact, the following is the general program:

1. Those who sign the original paper are the charter members and they meet to choose the first board of directors, the first credit committee, and the first supervisory committee. In their choice they are limited to their own number, so long as those whom they choose are willing to serve. In selecting the committee, three things should be kept in mind.

A. The board of directors should be representative of the group to be served, should represent all sub-divisions of the group, and must be willing to work toward making a success of the credit union.

B. The credit committee should be composed of men capable of making correct estimates of credits. This committee should be relatively small (usually three members), as it is often called upon to act in a hurry and an emergency demands prompt action. The supervisory committee (never more than three members) does the auditing. This committee should preferably contain one or more members familiar with bookkeeping, as its chief job is to check up on the books every three months.

2. The directors meet and choose the officers. The primary requisite of the officers is to be found in their desire to develop a credit union. They must like it. They must be capable of making a hobby of the credit union and have vision enough to see what a fine service it can render despite humble beginnings. Officers and directors serve without compensation. When a credit union is established under the auspices of a mill, it frequently receives rent-free the modest quarters that are necessary for the transaction of its business.

3. The plan of operation should meet the maximum convenience of the members. The credit union should be as "handy as a pocket in a shirt," and the hours of operation, the place of operation, and all the details should be worked out as to fit in with the maximum convenience of the members.

Entrance Fee

It is advisable to charge an entrance fee, because it will help to defray the organization's expenses, it will enable the accumulation more readily of a substantial reserve fund, and it will make

CONTRIBUTIONS *to "The Overseers' Corner" are paid for without regard to length. We will use letters discussing the narrative on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute kinks or practical helps will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. If these pages interest you—contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42d St., New York, N. Y.*

Pete and Bill are off enjoying their vacations, but will be back on the job again.

Employees Benefit

As a memorial to the late Merle Bell, president of the company, the Bell Co. of Worcester, Mass., has instituted a benefit system whereby the 950 employees receive $250 each in life insurance, accident benefit, and a loan plan. The system does not require any financial obligation on the part of the employees.

provision for the admission of new members upon an equitable basis when the book value of the shares is in excess of their par value. The entrance fee should be nominal and 25c is recommended on the basis of a par value of $5. Funds should be made withdrawable at any time under the following conditions: (a) Thirty days written notice of intention to withdraw; (b) withdrawals to be paid in the order of their filing and as funds thereof become available; (c) a member who has filed notice of his intention to withdraw can exercise no privileges of membership, although his shares continue to participate until redeemed.

In addition to the funds realized from the sale of shares, the credit union may borrow from banks, from members, and from others. Except for the guarantee fund, which the laws in some States may require to be invested in a particular manner, the funds of a credit union are primarily to be used for the purpose of making loans to members. Surplus funds not needed for loans to members should be deposited in banks or invested in securities.

Loans

All members in good standing, with the exception of the board of directors, officers, and members of the credit and supervisory committees, who are subject to restrictions, should be eligible to borrow. Those entrusted with the management of the credit union may only borrow to the extent of their shares and deposits. It is advisable to select officers who can do without loans, if the credit union is large enough to permit of this being done. Having in mind that conditions change **and** that new purposes for credit unions are constantly in the process of development, yet in a general way loans are of two classes: First, the remedial loan, which is for the most part a loan to assist a member over a very difficult financial emergency; second, constructive loans, such as loans for educational purposes, stock purchasing, cooperative buying, etc., which promise to help the borrower improve his condition of life.

The security that the credit union demands for a loan is the promissory note of the borrower with one or more endorsements, supplemented by a lien upon the borrower's shares and deposits in the credit union. However, the requirement for endorsement is waived if the loan is for an amount below a certian sum, say $25 or $50.

As a matter of principle, the interest charged on the loans should be no greater than is required to pay the operating cost, provide for a reasonable reserve or guarantee fund, and pay a moderate dividend on shares. It is well to fix a maximum interest rate in the by-laws. A rate of 1% per month on the unpaid balance is a fair rate. The by-laws may fix a general maximum length of time for which loans are made; but the time of individual loans should be fixed by the credit committee, with due regard for the nature of the employment in which the members are engaged, their ability to pay, and the obligations they must meet. A maximum of one year should be sufficient, even though it may be necessary at the expiration of that time to renew a portion of a loan.

Loans should be repaid in weekly or monthly instalments, or in a single sum, depending on the convenience of the borrower, the security on which the loan is granted, and the purpose of the loan. Loans secured by listed stocks and bonds may be made with safety for a stated period of time and repaid in a lump sum at the end of that period. Loans on second mortgages should be required to be repaid by instalments.

Profits

The net profits of a credit union are distributed as follows: (a) A certain percentage is set apart to the guarantee fund, generally 25% fixed by law; (b) such part of the balance as may be decided upon may be distributed as dividends among the members; (c) the balance is carried as surplus or undivided profits. The guarantee fund provides protection for depositors and other creditors of a credit union as well as protection for shareholders in the event of losses. Dividends, as a rule, are declared annually at the end of the fiscal year.

The promotion of a credit-union organization is an unselfish public service. No one can gain to the amount of even a bent penny by its organization except the members of it. There is a tremendous need for credit unions, and their rapid expansion depends in largest measure upon the willingness of members to spread knowledge of the plan and to help new units to organize. The establishment of a credit union within the organization, organized by and for the employees, should and will fill a definite need.

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Overseers' Practical Helps

"On Call" Layoffs Abolished

To simplify my production control in the rewinding department of a worsted and woolen mill, I put all the winders on teams consisting of five girls each. As demand falls off now, any number of teams can be sent out to give me just enough girls for the work on hand. Teams are sent out only one day at a time. By this arrangement each girl has pay every week.

The number of teams to be out on Tuesday is determined on Monday morning and a notice posted stating: "Teams 5, 6 & 7 will be out Tuesday. Report for work Wednesday." This applies to both shifts. When a period of full operation is to be broken, we find that team No. 7 was the last out, so team No. 8 is the first out in the new curtailment. There is never more than one day difference in the "Out" time for any two teams.

We have used this system for over two years and it works even better than I anticipated. Labor turnover has been reduced to a new low, and my entire force is at my finger tips within eight to sixteen working hours.

It is a fact that the best and most ambitious girls will seek other work when they are laid off on call. Those who return are always antagonistic

Control Card
(No dates necessary. Only X for days out)

Team									
1	X	X							
2	X	X							
3	X	X							
4	X	X							
5	X	X							
6	X	X							
7	X	X							
8	X	X							
9	X	X							
10	X								
11	X								
12	X								
13	X								
14	X								
15	X								

Control card for team system

"Brown's" shift (Top of each team card)	Team No. 5 (Team card)
3745 Mary Markey	
3854 June Markey	
3865 Francis Thomas	
3868 Jody Smith	
3930 Mary Ash	
"Jones's" shift	
3775 Evelyn Muhs	
3786 Julia Mims	
3796 Freida Allen	
3822 Aida Antonio	
3929 Alice Brodsky	

Records of team arrangement

toward the steady workers. Their attitude is (and justly so), "I am as good as she is, or they are."

What overseer is capable of saying (without favoritism) who should, and who should not work?

From my success with the team idea, I am convinced that I did the best thing possible for the winders. Certainly I took a big load off my own conscience in dividing the work equally between all. The accompanying team card and control card show the simplicity of team management.

GEORGE W. REID.

Removing Oil Stains from Gray Goods

For removing oil stains from cotton and rayon gray goods, the following list of "safe" oil removers has been prepared by a committee from the National Association of Finishers of Textile Fabrics, cooperating with the American Association of Textile Chemists & Colorists:

Sulphonated castor oil.
Red oil (see below).
Soap (olive oil, red oil, tallow, pine oil).
Sodium acid fluoride (to remove iron rust).
Oxalic acid, washed out immediately after use (to remove iron rust).
Solvents: Tetralin, hexalin, chloroform, carbon tetrachloride, naphtha (to be used either alone or in connection with soaps and sulphonated oils).

Note: Other organic solvents could doubtless be found which would work equally well.

A typical "spot-wash" is made as follows:

White Castile coap	10½ lb.
Chloroform	½ lb.
Ammonia 26° Be.	3 lb.
Total	300 lb.

The use of red oil (oleic acid) is based on the principle that when mineral oil strains are covered with red oil and the cloth is kier boiled, the caustic in the kier combines with the red oil locally to form soap, which emulsifies the mineral oil.

Classified as "unsafe" are the following compounds:

Amyl acetate.
Unsaponifiable oil or wax emulsions.
Linseed oil or other difficultly saponifiable oils, or preparations containing same.
Acids (except oxalic acid).
Alkalis (except ammonia).
Oxalic acid (if not washed out promptly).
Hygroscopic substances which may develop mildew if goods are stored.

The committee issued the following precautionary remarks in reference to use of oil removers:

1.—"Oil removers should contain no free alkali except ammonia.

2.—"They should be applied by sponging, and without rubbing of any sort.

3.—"All oil removers should be capable of being entirely removed during the regular bleaching operation.

4.—"The use of soaps and soap mixtures as oil removers has some tendency to flatten down the loose fibers and prevent their removal when singed. Probably the most harmless and all-around most satisfactory oil cleaner for ordinary cotton goods which are to be bleached is red oil, applied without rubbing.

5.—"Oxalic acid must always be washed out after use, and is not considered 'safe' unless this is done. The other cleaners when used in large quantities should also be washed out.

6.—"Oil removers whose composition is unknown should be used with particular caution.

7.—"Metal containers for oil removers should be examined carefully for rust, as this may cause iron stains when the remover is applied to the fabric.

8.—"On all goods which are to be dyed from the bale, no oil remover of any description should be used. Also on goods which are only de-sized preparatory to dyeing, and on goods which are given merely an open half bleach, we believe it is much better to eliminate the use of oil removers.

9.—"The use of oil removers on rayon fabrics is not to be encouraged. If used, they must be applied with the utmost care, as the fiber is easily chafed. They should definitely not be used on fabrics containing cellulose esters (Celanese, Acele, Seraceta, etc.).

10.—"When goods are damaged by the use of oil removers, the complaint should be settled on the basis of the ability of the finisher to remove the stains as they are actually received by him.

11.—"In all cases where oil removers are used, the responsibility for using them should rest on the gray mill, and it should be distinctly understood that the recommendation of certain oil removers as 'safe' carries with it no guarantee that the mere use of the recommended product will automatically convert badly stained gray goods into first quality fabrics on finishing."

The report states also: "It should be added that a number of proprietary stain and oil removers of unknown composition are on the market at the present time and some of these are being regularly used and are giving good results.

"While we do not oppose the use of these products, particularly where they have already been found satisfactory, we cannot include in the 'safe' list any product whose composition may not be published."

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Chemical Burns

Prompt first-aid treatment may save an eye or a life

CHEMICAL burns are often thought to be similar to heat burns, but this is true only in that both may cause destruction of body tissue. The severity of chemical burns depends upon the concentration of the chemical and the duration of the contact. Generally, the first factor cannot be controlled, but the second can; and proper first aid treatment rendered immediately is of outstanding importance. The following discussion of the nature and treatment of chemical burns is abstracted by special permission from a copyrighted bulletin on the subject published recently by National Safety Council, Chicago.

Successful handling of chemical burns calls for the complete removal of the irritating agent or the administration of such treatment as will render the chemical inert. Treatment for shock may also be necessary.

The important things to remember when confronted with the emergency of a serious burn are the following:

1. Be calm and gentle.
2. Decide what to do and do it quickly.
3. Remember that the patient not only is in pain, but is also suffering from shock.
4. Get expert medical assistance as soon as possible.

Classification of Burns

Burns can be classified according to the degree of tissue injury as follows:

1. First degree burns. Such burns are characterized by redness and heat accompanied by itching, burning and pain.
2. Second degree burns. When the chemical continues to act, blisters are formed. These burns heal without scarring if there is no infection.
3. Third degree burns. Such burns involve the loss of skin and deeper tissue. Scarring may result.

The treatment of burns should have a triple objective:

1. To relieve pain immediately.

2. To control the loss of fluid.
3. To prevent the absorption of poisonous substances which may kill the patient several days after the injury has occurred.

Many concentrated chemical solutions have an affinity for water. When they come in contact with skin or flesh, water is withdrawn so rapidly that the original chemical composition of the tissue (and hence the tissue itself) is destroyed. In fact, a strong caustic may dissolve even dehydrated animal tissue. The more concentrated the solution, the more rapid is the destruction.

First Aid

Persons giving first aid often make the mistake of first applying an antidote. It is of advantage to apply some neutralizing agent, but this treatment is not nearly so important as proper flushing with water. Many antidotes will neutralize the chemical that lies on the skin only and not penetrate to a sufficient depth to prevent corrosion of the deeper structures. Also, when burns are treated by neutralization, heat may be generated by the chemical action. Large amounts of water tend to carry off heat.

Since it has been proved conclusively that washing all acid or alkali burns with a generous supply of water is the best method of treatment immediately after the burn, it is essential that an ample supply of water be made available near all places where a workman is likely to encounter corrosive chemicals.

A shower made up of 1¼- or 1½-in. pipe equipped with a quick-opening valve, giving a strong impact of a 1¼-in. stream of water will penetrate more rapidly than water from a tap and is a type used quite extensively in chemical plants. A satisfactory type of shower bath is one with a quick-opening valve, which operates by merely stepping on a platform, the workman being deluged with water immediately. In many plants where operations are carried on quite some distance from a shower bath it is advisable to have tubs or barrels of water nearby into which workers can jump in an emergency.

Remove Clothing

If a patient's clothing becomes soaked with corrosive fluids, burning will continue until the clothing is removed. Clothing should be removed immediately, but at the same time every effort should be made to keep the injured person warm. When the burned area is exposed, the acid or alkali which remains should be removed by flushing copiously but gently with large quantities of water. Shock will be lessened if the water is warm, but speed is of greater importance and, if possible, a stream of running water should be directed onto the burned area so that all the chemical can be washed away. The burned area can then be treated as any heat burn and covered with any suitable protection, preferably a water-soluble jelly. This will avoid the necessity of removing grease when further treatment is given by the doctor.

Tannic Acid Treatment

According to some authorities, one of the most effective agents now known to combat burns is tannic acid. (This applies mostly to third degree burns, as other authorities have asserted that where the epidermis or outer skin is not destroyed, tannic acid may interfere with its activity). Eight level tablespoons of tannic acid powder in a glass of water is a sufficient concentration. After sufficient water has been applied to the injured area, pieces of clean gauze or muslin should be dipped into the solution and then laid dripping wet on the burned area. Do not, under any circumstances, apply the solution with cotton batting. After the muslin or gauze is in place, do not disturb it, but keep it constantly wet by pouring the solution onto the bandage with a teaspoon. An atomizer can be used, but be sure it has been properly sterilized. When a spray is used, muslin or gauze is not needed. The solution should be sprayed directly onto the burns and on the skin around them. As the sprayed parts turn brown, the pain will stop. Wet or spray at least every 15 min. until a doctor arrives. Keep a supply of tannic acid powder on hand for emergency. Once the powder has been mixed with water, it must be used immediately. For treating face burns, a 5% tannic acid jelly or paste may be used. Tannic acid solution should not be allowed to enter the eyes.

Shock

Shock usually occurs in some degree after all injuries. When a person is

FIRST AID FOR CHEMICAL BURNS

Acetic Acid, Hydrochloric Acid, Nitric Acid, Oxalic Acid, Picric Acid, Sulphuric Acid

Bathe freely with water and apply a saturated solution of bicarbonate of soda. In the case of nitric acid, one doctor recommends a thorough scrubbing with soap, ammonia, and water until all the yellow pigment is removed.

Carbolic Acid or Phenol

Wash at once with water and then with grain alcohol, grain alcohol combined with ferric chloride, or sodium sulphate.

Hydrofluoric Acid

Apply a 5% solution of ammonium carbonate or powdered sodium bicarbonate to the burn. Boric acid is also recommended.

Ammonia, Caustic Potash, Caustic Soda, Soda Ash

Bathe freely with water and then apply a 2% solution of acetic acid.

Copper Sulphate and Zinc Chloride

Application of sodium bicarbonate solution is considered an effective treatment.

Chromium

While chromium burns should be given a thorough washing with water, satisfactory results may also be secured from the application of a few drops of ammonium polysulphide, thus reducing the acid to a milder irritant.

Lime

Wash thoroughly with water. Should further trouble be experienced with eye cases, the deposit of calcium salts can be dissolved from the eye by a neutral solution of ammonium tartrate.

Tar

Remove tar from skin with trichlorethylene, which may be applied with a specially constructed spray or with a swab. A burn of any extent is a case for a doctor.

Eye Burns

Wash eyes thoroughly with large quantities of plain, clean water. First aid must be instituted immediately following the injury; a few seconds delay may be sufficient to cause serious damage or even loss of vision. During the flushing process the lids should be held open so that the water can come in contact with the eyeball and inner surfaces of the lids. Any available means can be used for this treatment, such as drinking fountains, shower baths, hose, or any type of water container. If hose is used, be sure to use a slow or spent stream of water so that the eyes may not be injured or the chemical driven farther back under the eyelids. While the washing of the eyes is going on, if at all possible, have a physician on his way to the scene.

Conveniently located shower as first aid treatment for chemical burns

suffering from shock, his face will be pale with an anxious expression, his eyelids will droop, and his eyes will be dull and the pupils large. The skin is usually clammy and covered with cold sweat, and the person becomes somewhat stupid and takes little interest in things about him. In some cases shock is accompanied by nausea and vomiting and possibly total unconsciousness. Breathing will be shallow and feeble, and pulse rapid and weak, probably not being felt at the wrists. When shock conditions are observed, a doctor should be summoned immediately. Any one who has been badly shocked should be kept warm, quiet, and at rest. The disturbance of transportation may easily prove fatal. Persons suffering from shock should be moved only on the advice of a physician. The person should be placed in a comfortable position with his head low (unless there is a skull fracture or hemorrhage from the head). Foreign bodies, such as false teeth, tobacco, and chewing gum, should be removed from the mouth. The person should be wrapped in warm blankets, and, if conscious, may be given a teaspoonful of aromatic spirits of ammonia in half a glass of water, or hot coffee, hot tea, or hot water. However, give no stimulant in cases of internal bleeding or in arterial bleeding until the hemorrhage has been stopped. If the person is unconscious, do not put anything in his mouth, but use aromatic spirits of ammonia poured on a cloth under his nose. This may first be tested for strength by the first aid man, who can hold it under his own nose. Hot water bottles, or hot bricks, can be placed around the injured person. Care should be taken that they are sufficiently protected so that the patient will not be burned. Legs and arms may be rubbed toward the body, but this should be done under the blankets, being careful not to uncover the patient.

Eye Burns

Chemical burns to the eye differ from those to the skin, as the eye always presents a moist surface. While the eye has no protecting surface, the outpouring of tears tends to dilute and remove any material.

The seriousness of an eye injury is determined by the depth of the burn, which depends on: (1) the strength and character of the chemical, (2) the length of time before treatment, and (3) the type of the first treatment. The importance of immediate first aid should be stressed, as after a short period of contact, damage may be caused to the eye which cannot be repaired.

The mechanical removal of the chemical is very important. This can best be accomplished by careful washing, even in the case of substances which are not readily soluble in water. The water can be poured from a cup or glass onto the bridge of the nose and allowed to run over the eyeball, which is kept exposed by holding the lid open. Do not pour water directly on the eyeball. A man with either acid or caustic in one or both eyes is temporarily blind. He is suffering intense pain and is often in such a mental state as to render him difficult to manage. In cases of this nature it will be necessary to use considerable force and restraint in order to manage the injured person properly. There should be no hesitation in a case of this nature, and, if necessary, hold the patient down on the floor or nearest bench while treatment is applied. You may injure his feelings, but save his eyesight; and the injured feelings will soon be repaired.

Experiments have led to the conclusion that treatment by neutralization increases the damage to the eye; therefore, thorough washing with water should be encouraged as a first aid measure. This is true regardless of the concentration of the chemical.

These experiments also indicated to some authorities that neutralization as treatment after washing with water was not of added benefit and might be dangerous, as the chemical action of the neutralizing agent might impair vision by creating scar tissue. However, there should be an early use of bland oil or antiseptic ointment, such as boric acid ointment, to avoid adhesions.

Specific Treatments

Exposure to different chemical agents produces different effects. In addition to the general treatment previously described, exposure to any particular agent may require certain specific first aid treatment. In the accompanying panel directions are given for first aid treatment of burns caused by some of the more commonly used corrosive chemicals.

Remember always that flushing the burned area with water until a glow returns to the skin is the important first treatment and that a doctor should be brought upon the scene as soon as possible. Pending arrival of a doctor, laymen who are called upon to give first aid should always use care and not attempt treatment beyond their abilities or beyond the immediate needs of the case.

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New Entering Methods

Strange ideas introduced to old silk trade as cotton procedure is applied to handling rayon

By Fred J. Luettgen

UP to a few years ago, very few changes had been made in methods of entering warps in steel-heddle harness. Today one innovation after another is taking place in the entering department. The objective in view is always the attaining of greater economy and efficiency.

It is no longer necessary to employ a hander-in to help enter the warp. In fact, after the enterer becomes familiar with the new methods now introduced, he can do more work alone than with a helper.

The Cotton System

Rayon is responsible for introducing the cotton system of warping into the silk industry. Rayon warps made in the cotton mills are not ordinarily leased. When these warps are prepared for

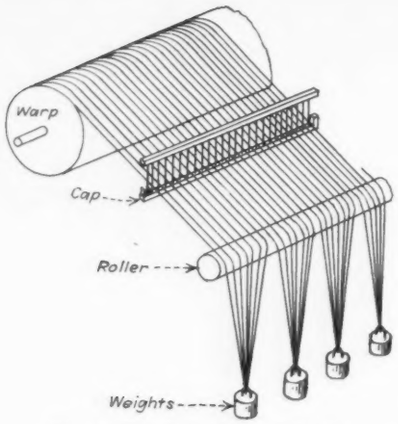

Fig. 1. Placing the comb in the warp.

entering, they are brushed with a comb. The combs vary with the size of the rayon. For instance, if the warp is made with 125-denier rayon, a "125-denier" comb is used; if the warp consists of 150-denier rayon, a "150-denier" comb is used.

The usual procedure is to hang a small weight on each section of the warp, as in Fig. 1. The warp is then unrolled until the sized part is exposed. The comb is next placed on top of the warp and, with a gentle pressure, pushed forward into the ends. This operation separates the ends between the teeth, which are then locked in by means of a cap placed on the tips of the comb. The warp is now hung up in the frame, as in Fig. 2, and the comb is fastened to the harness just below the eyes of the heddle.

The enterer will then take a section at a time and place the end of it in a clamp, both sides of which are lined with velvet or plush. This clamp is held together with cords, and a weight is attached which holds the ends firmly, although the velvet or plush permits them sufficient freedom to be pulled out individually without breaking. The enterer then begins to enter the harness according to the draft. He inserts his hook into the eye, as in Fig. 3, and reaches for the end in the comb. In this manner he pulls one end after another out of the comb and into the eyes of the heddles.

Very few silk manufacturers have accepted this method as a practical improvement. The majority view it with indifference and doubt. Their contention seems to be that the results do not warrant the effort. The argument they set forth is that so few warps made by the cotton system reach the silk industry that the only result is a loss of time through experimentation.

Those who have sincerely tried the new method have adopted an opposite attitude. They not only have accepted the new method as a practical improvement, but from it they have developed a new one based on the same principle. This new method makes it practical to enter silk warps without a hander in. For the sake of distinction we shall call this the "silk system."

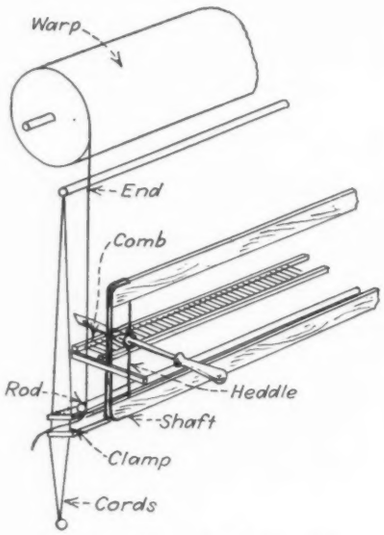

Fig. 3. Enterer's hook inserted.

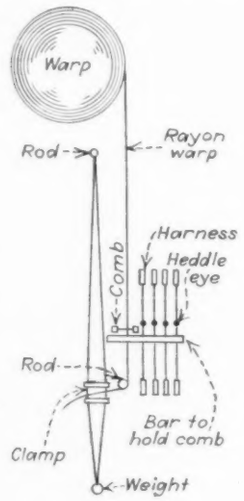

Fig. 2. Work in position for cotton system.

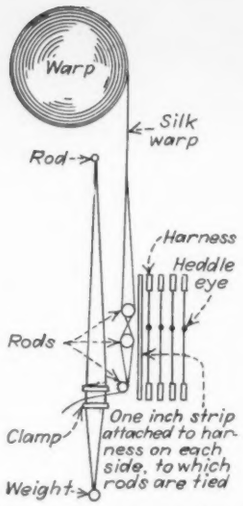

Fig. 4. Work in position for "silk system."

The Silk System

To prepare the warp and harness for entering with this new method, the same principles are employed as in the old method of entering silk warps. The one exception is that, instead of the cross rods being placed in a position to make them convenient for the hander-in, they are lowered so that the eye of the heddle is in the center of the two rods, as in Fig. 4. The two rods are then fastened to the harness, and they are placed close together so that there is not more than 1 in. space in the cross. The enterer puts his hook in the eye and reaches into the cross with it, separates the end, and pulls it through. This method requires two crosses at the beginning of the warp. The first cross will be dissipated, because the enterer pulls the ends out as he draws them through the eye.

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Personal News

Charlie Harrel is overseer of weaving at the newly organized Carter Fabrics Corp., Greensboro, N. C. **W. B. Tomas** is overseer of preparation and throwing, **Morris Geer** is master mechanic, **W. D. Fisher** is overseer of shipping and receiving, and **W. L. Register** is head of the payroll and cost department.

John Strater has given up his position with Pilot Mills, Raleigh, N. C., to become general overseer of spinning and winding with Smithfield (N. C.) Mfg. Co.

J. N. Brock is now master mechanic at National Weaving Co., Lowell, N. C. He succeeds **L. N. Kincaid** now connected with Kendall Co., Paw Creek, N. C., as master mechanic.

T. J. Gribble has assumed his new duties as superintendent of Rodman-Heath Cotton Mills, Waxhaw, N. C.

A. E. May has resigned as overseer of dyeing at Texas Textile Mill, Mckinney, Tex., to accept a similar position with a mill at Spray, N. C.

H. L. Reed, formerly of Atlantic Mills, Macon, Ga., has become overseer of carding at Arnall Mills, Sargent, Ga.

Francis L. Kelley has been named

The Overseer's Corner

overseer of dyeing and bleaching at West End Thread Co., Millbury, Mass.

W. A. Parris, who has been night overseer of weaving at Springs Cotton Mills, Lancaster, S. C., has been appointed day and night overseer of weaving at Eureka plant of Springs Cotton Mills, Chester, S. C.

Ernest Deeming has resigned as superintendent of the worsted division of Farr Alpaca Co., Holyoke, Mass.

D. E. Sherrill has been appointed assistant superintendent of Clyde Fabrics, Inc., Newton, N. C., in addition to his present duties of overseer of carding and spinning.

Leo T. Hill is now overseer of finishing at Draper Bros., Canton, Mass.

Everett Wood is connected with the dyeing department of Arlington Mills, Lawrence, Mass.

George E. Stemler is now overseer of the bleaching department of Narragansett Finishing Co., Westerly, R. I.

Leo Schlesinger is now superintendent of the rayon division of Farr Alpaca Mills, Holyoke, Mass. Mr. Schlesinger was formerly connected with Newmarket Mills and with Wellington, Sears & Co.

E. K. LaCoste, associated with Palmetto Cotton Co., Newbury, S. C., subsidiary of Kendall Co., has been transferred to Orangeburg, S. C., where he is in charge of the office opened by the company there.

E. A. Johnston, formerly overseer of carding at J. W. Sanders Cotton Mill, Meridian, Miss., has been promoted to night superintendent of Aponaug Mfg. Co., Yazoo City, Miss., another unit of the J. W. Sanders mills.

J. E. Weaver is now overseer of Sanforizing and finishing at Eagle & Phenix Mill, Columbus, Ga. He was formerly night superintendent of Texas Textile Mill, McKinney, Tex., where he was succeeded by **J. L. Fowler.**

Fred Blume has been appointed overseer of night carding at Gayle plant No. 2 of Springs Cotton Mills, Chester, S. C.

T. S. Harris, formerly overseer of weaving at Trion (Ga.) Co., is now assistant superintendent of Tallassee (Ala.) Mills.

C. B. Wall is now overseer of carding and spinning at Jefferson Mills, No. 3, Royston, Ga.

Forest Bailey has become superintendent of the designing department of Cliffside, N. C., Mills.

A. C. Link, of Winnsboro, S. C., has accepted the position of assistant superintendent of U. S. Rubber Products, Inc., Stark Mills, Hogansville, Ga.

J. E. Stone has been promoted to general overseer of spinning at the Aragon-Baldwin Cotton Mills, Whitmire, S. C., from assistant overseer of the same department.

A. Ballew has been appointed overseer of weaving at Anderson (S. C.) Cotton Mills.

H. H. Field, formerly with Eagle & Phenix Mills, Columbus, Ga., has become superintendent of dyeing and finishing at Stonecutter Mills Co., Spindale, N. C.

P. K. Dry has been made superintendent of both Linn Mills Co. and Corriher Mills Co., Landis, N. C.

C. C. Ramsey, cloth grader, has been promoted to overseer of the cloth room at Osage Mfg. Co., Bessemer City, N. C., to fill the vacancy left by the recent death of J. L. Grant.

Awards, Meetings, and Such

Overseer R. E. Sheehan, recently placed in charge of the dye plant of Bibb Mfg. Co., Bibb City, Ga., was the winner of an award of $250 for his diligent research and effective work in cost reduction while he was at the Macon, Ga., plant . . . Overseer of weaving F. A. Eggleston was given a testimonial dinner when he retired after 37 years of continuous service with Old Town Woolen Co., Guilford, Me. . . . Employees of Goodall Worsted Co., Sanford, Me., tendered a surprise testimonial to Col. William N. Campbell, president, in honor of the late Col. Louis B. Goodall . . . Woolen Overseers Association of Eastern Maine held its annual outing on Aug. 14 . . . Outings were held by Martin Dyeing & Finishing Co., Bridgeton, N. J., Dodge Yarn Mills, Webster, Mass., and Monarch Mills, Union, S. C. . . . More than 1,000 employees of Chatham Mfg. Co., Elkin, N. C., received a bonus of one week's pay on July 4.

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Questions & Answers

Streaks in Gabardine

Technical Editor:

I am enclosing herewith a sample of gabardine which exhibits some rather serious warp streaks. Will you kindly advise me as to the cause of these streaks and what measures should be taken to prevent their recurrence?

Examination of the fabric indicates that the imperfections are due to warp slippage during the finishing operation. Without a careful analysis of the yarns employed, we estimated that the warp yarn is approximately 2-ply 60s worsted very firmly set in the warp, with probably 2/40s cotton (combed) in the filling, plain weave.

It is our opinion that the warp slippage is accentuated by the smooth nature of the filling yarn employed. This may be partially overcome by using a rougher type of filling yarn, composed of animal fiber rather than vegetable or synthetic.

It is doubtful, however, if the modified composition of the filling yarn would eliminate the warp streaks, and it appears to us that cloths of this type cannot be considered a practical manufacturing undertaking when using the plain weave in conjunction with a warp-set construction. A close examination of the fabric will reveal the fact that the filling yarn is perfectly straight across the piece, with the warp bending over and under alternately. Unless the warp is set firmly enough to prevent any play whatsoever, the tendency of warp contortion is strong and inevitable during the finishing operation. Of course, such excessive setting is impractical from a weaving viewpoint.

To illustrate the ease in which these warp threads can be distorted, hold the cloth between finger and thumb of each hand then exert a little pressure on the warp ends while stretching widthways. It will be found that the warp threads so disturbed will slide along the filling yarn. As a matter of fact, the fabric in question is not a true gabardine, but actually should be classed as a filling rib or rep fabric. A real gabardine is generally made with the well-known 2/2 twill or 2/1 twill set very firmly in warp and using a slightly heavier yarn in filling. In this case, using 2-ply 60s worsted in warp and, say, 2/25s cotton (combed) in filling, and employing a 2/1 twill weave, a finished construction of 96 or 100 ends per inch and 50 to 54 picks per inch would give a good type of gabardine on the order of sample submitted, and with no danger of warp streaks of the nature encountered in this fabric.

Setting Curl in Mohair Yarn

Technical Editor:

Can you advise us what is the best process for setting the curl on mohair yarn which has been curled by means of the English curling machine? (8385)

The following method for setting the curl is recommended by the manufacturers of the machine:

"After the yarn has been firmly twisted for curling, it is made up into hanks—taken from the reel of curling machine on which it is wound continuously as it is twisted. If the curl imparted by the twist is to be a permanent feature of the yarn, it needs to be well 'set,' and unless particular care is exercised at this stage, the previous preparation is of little value, so attention needs to be directed to the following points.

"A suitable vat is required, which should be used for no other purpose than boiling yarns. This vat needs to be constructed with a false bottom, under which a steam pipe or steam coil is placed in such a position that the material to be boiled does not get into contact with the steam or steam pipe; otherwise yarns will vary in appearance after dyeing. The vat has clean water run into it, then the twisted yarns are put in and submerged. The water is raised to the boil and kept at boiling point for 1½ to 2 hr., and during all that time the yarn must be completely submerged; otherwise it will not dye evenly.

"It is well known that wool and hair

yarns are difficult to 'wet out' quickly, and, as this is necessary to make the boiling effective, it is desirable that something should be done to assist to this end. There are many modern substances which may be used to facilitate wetting-out, but it will be found that a little soap, which is relatively cheap and handy, is satisfactory; and for this purpose about 1 oz. of soap in 3 gal. of water will be effective. It not merely assists in wetting-out quickly, but it also tends to remove a little of the grease and dirt, though this is not its primary function.

"It is important to note that to set the yarn and make the curl permanent, the temperature of the water must not be less than the temperature to which the material is subjected at a later date.

"As most of these goods are dyed 'at the boil' (212° F.), that should be the minimum temperature for fixing the curl.

"After boiling, the water is run off, and the yarn allowed to drain and cool before it can be handled. On cooling, some of the superfluous moisture can be easily removed by hydro-extracting, and then the curled yarn should be thoroughly and uniformly dried, at not exceeding 180° F.

"It is a mistake to rush yarns from boiling to beaming without paying attention to the drying. Uniformity of moisture content is an important feature in dealing with curled yarns. Just which is the most scientific method of drying and fixing the curled yarn is a moot point in the trade. At all costs, weakening of the yarn and end breakages must be avoided during the prolonged boiling period. Some firms arrive at this objective by allowing the water to drain off and the yarn to dry naturally, whereas other firms producing and marketing really good-quality curled yarns, utilize the hot-air method to dry the yarn.

"The boiling time may vary a little according to the quality of the yarn—whether scoured or unscoured—and climatic conditions. We suggest that you carry out tests on small samples of the same material, and boil these 1½, 1¾, and 2 hr., respectively, and then test for strength and stretch. The correct boiling time could then be determined by the sample showing the best result. It is of the utmost importance for the yarn to be thoroughly dry before opening; otherwise it will lose some of its curl.

"Another point to consider is that the duration of boiling must be longer than the duration of dyeing; therefore, if the material is in the dye vat for 1½ hr., the boiling time for fixing should be 2 hr."

Tricot Knitting Production

Technical Editor:

Can you tell us roughly how many tricot warp knitting machines there are in the country?

The Department of Commerce gives figures on the monthly production of tricot pieces, and we might be able to reach some figure on the number of machines if we knew how long a "piece" is and how many pieces one machine can produce in a given time. (8416)

It is estimated that there are 780 tricot warp-knitting machines in the United States, but over the last five years the number of such machines working full capacity has probably not averaged above 350.

In England, Germany, France, Italy, Russia, Japan, New Zealand, Australia, and Canada there are approximately 2,400 tricot machines, the great majority of which are in England and Germany.

It is difficult to estimate the number of pieces turned out in a given period, owing to the fact that each manufacturer has his own regulation as to how long the pieces shall be, such regulation being governed by the facilities he may have in his finishing department. The production is also governed by the fact that some classes of goods may run off the machine at the rate of 200 in. per hour, while other fabrics will produce only 80 in. per hour. In other words, it differs with the stiffness, or slackness of these different fabrics, of which there are a great number. Also, a fine yarn will usually produce a shorter piece than a stout yarn.

In the initial stages of the tricot machine industry, there was, generally speaking, only one fabric produced, the one used for silk gloves and underwear. The pieces in that case were usually cut off at 99 racks of the indicator, which registers one rack for each 480 rows of stitches. Given a yarn of 20/22 silk in the back guide bar, and a 75-denier rayon in the front bar for underwear cloth, a rack would measure 6 in. on the machine. A good machine will average 18 racks per hour and produce a piece in 8 hr. that would leave the finishing room 46 yd. long and 54 in. wide. Tricot cloth will usually leave the finishing room about double the length it comes off the machine, losing corresponding proportion in width.

The foregoing is based on a 120-in. machine of 28 gage, although there are in this country many machines of 144-in. and 180-in. gage.

The number of racks in a piece varies from 60 to 240, according to the qualities and the dressing facilities.

Shady Woolen Filling

Technical Editor:

We are forwarding under separate cover two samples of our cloth in the grease which has been giving us trouble due to shaded filling. We have been unable to discover the cause of these shades and shall appreciate your kind assistance in helping us determine whether the shading is caused by mixed filling or whether the stock from which the yarn is made is unevenly blended. As you will see from examination of the samples, bobbins of yarn vary in color when run on a three-shuttle automatic loom. The broad sample was run on a three-shuttle automatic C. & K. loom, while the narrow sample was run on a single-shuttle Draper loom. (8435)

Inspection of the broad sample woven on a three-shuttle loom shows no uneven or mixed filling. We believe this sample would constitute good delivery for the type of goods, provided the finish is suitable. However, if the few dark specks are objectionable, the trouble is with the stock used or in the carding. These specks are apparently worsted hard ends and require close carding for removal. If cards are not well adapted to the work, we suggest a soft rag in the mix which can be more easily opened up.

The narrow cotton-wasp kersey woven on a single-shuttle loom shows a solid bobbin of yarn not only heavier in size, but also darker in the mix. The heavy bobbin also appears heavier at the top, due to throwing off the spindle if spun on a mule. If this fault is prevalent in the mill, it can easily be discovered by reeling carefully three or more bobbins from top to bottom and noting the variation.

The color is due either to the yarn being from different lots or possibly to the mixing of tops and bottoms from ring cards, if such are used. Weight variations may also be due to the same cause. Single-shuttle work demands close attention in carding and spinning to eliminate barry goods.

Mohair Plush Dyes Unevenly

Technical Editor:

We are sending 12 in. across the width of one of our fabrics. This sample is a construction with 100% curly mohair yarn and an all-cotton back. You will notice that it appears to be shady or unevenly dyed from side to center. We have tried three different dyes, purchased from three different concerns and we find this trouble in all the different dyeings. We shall appreciate your advice as to what is causing this particular trouble. (8444)

You do not state whether these goods are dyed in rope form or at full-width. If the shading is uniformly distributed throughout the length of the cut, it would indicate that they were dyed at full width; but if the shading runs diagonally and reverses, it would suggest dyeing in rope form. This class of fabric may safely be dyed in rope form, as it is not as likely to break, as is a frieze. However, the pieces should be tacked along the selvages, with the face of the goods inside.

The fact that dyes were bought from three different concerns does not necessarily mean that the dyes were different chemically, as one concern is quite likely to try to duplicate exactly the goods of a competitor. The trouble seems to be confined to the face of the goods and indicates that the color has been absorbed by the mohair unevenly, while the cotton color has been taken up quite regularly. Even dyeing of a fabric of wool or mohair depends on several factors. The goods must be uniformly clean and free from resisting materials, such as oils, lime soap, etc. There must be a uniformity of neutral reaction across the goods, one part must not be more acid nor more alkaline than another. There must be a constant temperature condition, and one side or the center must not be subjected to more steam than any other part. The goods must have at all parts a free access to the liquor containing the dye; that is, they must not be overcrowded in the kettle. No part of the goods should be able to get more dye liquor than another part, which may occur when there is too wide a space of liquor at the side of the piled-up goods in the kettle and when too much liquor is carried up by the goods.

Slow dyeing is preferable to hurried dyeing; the take-up of dye by the mohair may be restrained by various additions to the dyebath, for there is great danger in the later stages of the mohair becoming overdyed, and a slight overheating in one place will cause the color to be taken up so rapidly that it cannot be made even by further boiling, as would be the case with acid dyeing of wool. Addition of any alkaline salts to retard dyeing will result in the tendering of the mohair and should be avoided; rather, reduce the amount of salt and use a neutral leveling agent and dye at 180° F. instead of at the boil.

Naturally one cannot determine from the sample submitted just what were the conditions existing when it was dyed; if you will note how they deviate from normal, you will find the cause of the unevenness.

New Machinery and Processes

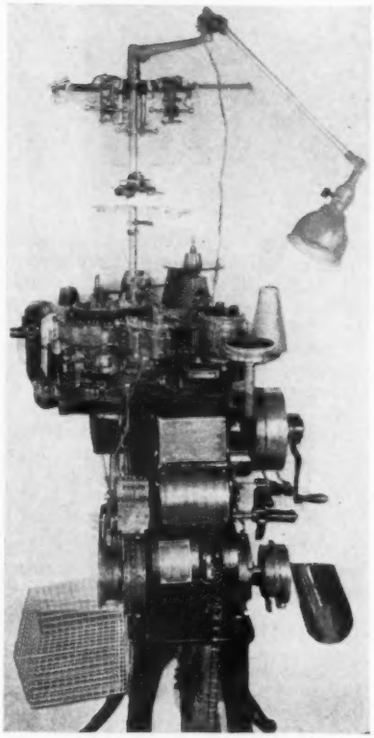
25-Step Sinker Reverse-Plating Machine

• The new 25-step sinker-reverse-plating machine brought out by Hemphill Co., Pawtucket, R. I., operates on the same principles as the 12-step machine, with 13 additional steps controlled by a single pattern drum. In addition to the reverse-plating mechanism, a Banner striper can be operated from the same pattern drum. With this machine, body yarns and plating yarns are reversed by the action of the sinkers, with no flexing or bending of the needles involved. The machine knits a wide range of patterns, particularly the large argyles for half-hose, anklets, and golf hose in gages 24, 36, and 48.

Wool Fiber-Length Sorter

• At the request of the wool section of Committee D-13, the textile committee of the American Society for Testing Materials, Alfred Suter, 200 Fifth Ave., New York, has developed apparatus for sorting wool fiber on the basis of staple length. In principle the equipment resembles the Suter-Webb cotton-fiber sorter, which has already won recognition in the cotton industry.

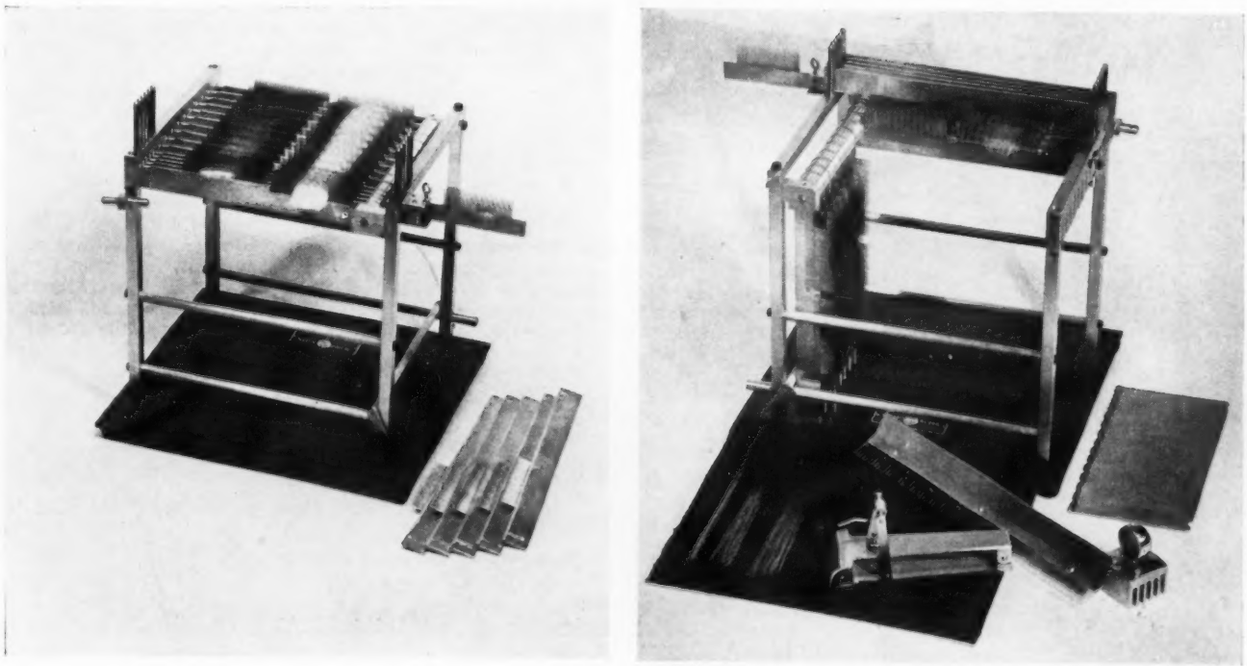
The apparatus can best be described by tracing a test through step by step. Suppose we have a sample of wool top we want to analyze for fiber length. We first lay a piece of the top on the right-hand set of combs, as seen in the left-hand photograph, and press it down into the pins by means of the special fork shown at the right foreground of the right-hand picture. By means of the clamp or locking nippers also shown in the foreground of the right-hand picture, we carefully pull out the fibers, a few at a time, through the combs of the set, pass the fibers through the single comb protruding to the right to remove floating fibers and neps, and then lay them in the left-hand set of combs, pushing them down with the fork as before. The shorter pins in this set prevent waviness being introduced in the fibers by the pushing action.



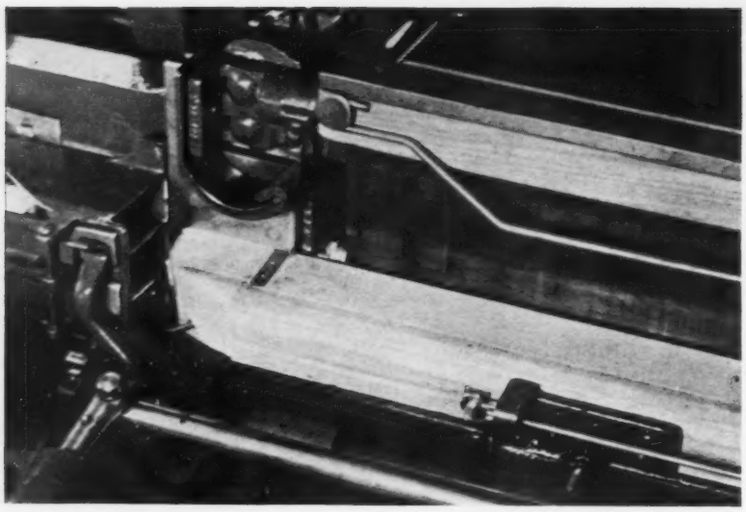
REVERSE PLATER

After some 300 to 500 milligrams of fiber has been thus transferred, the top combs, shown lying beside the apparatus in the left-hand picture, are put in place to help hold the fibers down; and the apparatus is turned around to the position shown in the right-hand photograph. The bottom combs, which are spaced ½ in. apart (except for the last 1½ in., where they are placed at ¼-in. intervals for more thorough sorting of the short fibers), are then swung downward one at a time until the tips of the longest fibers are found protruding from a comb still remaining in a horizontal position. These fibers are pulled out by means of the nippers and laid on the plush-covered board. Then another comb is lowered and the fibers found protruding from the next horizontal comb are pulled out and laid in another group on the board. This procedure is continued until all fibers are on the board.

Each group of fibers is weighed on a milligram balance, and its relation to the total on a percentage basis is computed. Curves are drawn based on the percentages to show the characteristics of the top, one



FIBER-LENGTH SORTER



CREASER

curve showing the percentages individually and another showing them cumulatively to better indicate the length distribution. From these curves a spinner can judge and guide the work of his combing department or determine whether he has received a satisfactory delivery, and he can decide what count of yarn it is possible for him to spin. The apparatus can be used for raw wool, if the wool is first properly sampled by an expert. It can also be applied to yarn, which, of course, has to be first opened up. The equipment is made in two models—one 6 in. for wool and the other 15 in. for mohair, hemp, jute, etc.

S3 Loom to Handle Flat Shuttles

• The S3 silk and rayon undercam loom, of the type Crompton & Knowles Loom Works, Worcester, Mass., announced some five years ago, is now available in a model which will handle a flat shuttle $16\frac{1}{2}$x$1\frac{15}{16}$x$1\frac{1}{4}$x$1\frac{1}{16}$ in. The wooden lay corners can be covered with felt, corduroy, or other material. With the exception of the changes made to handle a flat shuttle, the new model is similar to the other members of the family.

Creasing Machine

• Four different shapes of pockets may be pressed at the same time on the creasing machine manufactured by Fidelity Machine Co., 3908 Frankford Ave., Philadelphia. In 1933 the company announced gas- and steam-heated models of a similar machine, but the latest addition is heated by electricity. It operates on a 220-volt current, and the temperature is controlled by a rheostat to insure economical operation.

REED

Chromium-Plated Reed

• Previous difficulties which made it impractical to chromium plate a fine-count broad-silk reed have been overcome, according to an announcement by Greensboro Loom Reed Co., Greensboro, N. C. Chromium plating makes the reed rustproof; and the accompanying photograph shows a reed, half of which was plated, after being exposed to a salt spray for 60 hr. The hardness of chromium makes the reed particularly suitable for weaving silk and harsh synthetic yarns, where difficulty is encountered by the yarn cutting the reed dents.

The company is also doing chromium plating on shuttle tensions, crossing reeds, section reeds, Scotch-hook reeds, warper drop eyes, slasher immersion rolls, cloth rolls on looms, printing rolls, etc.

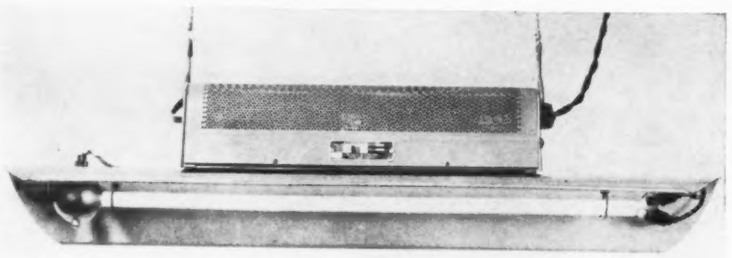
Long-Tube Mercury Lamps

• A modernized series of mercury lighting units of the long-tube, Cooper-Hewitt type—improved in lighting efficiency, operating stability and appearance—is now being introduced by General Electric Vapor Lamp Co., Hoboken, N. J. The new 50-in. light source operates at 350 watts, a.c., to supply the same light output which required 450 watts in previous models, its bare-lamp efficiency being 19.4 lumens per watt. The new 33-in. light source operates at 280 watts, in contrast with a previous 350, with an efficiency of 17.1 lumens per watt.

As equipped with newly designed enameled reflectors, the complete lighting units have an overall efficiency of about 15 lumens per watt. Both the reflector and tube are now intended for mounting in a true horizontal position. Starting, and restarting after any current operation, is instantaneous. The entire unit has been redesigned to simplify maintenance and make cleaning easy. All tube connections are made with insulated screw terminals.

Water Softener

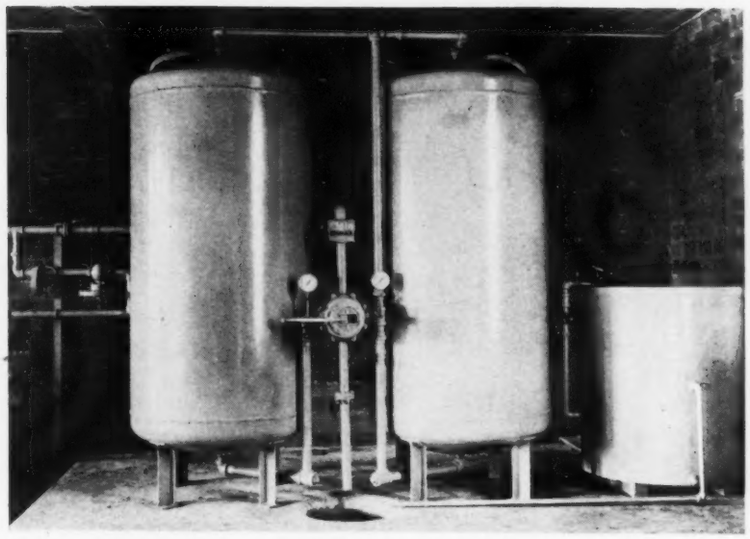
• High flow rate and a confined mineral bed which prevents loss of zeolite are among the advantages listed for the new two-flow water softener being marketed by Elgin Softener Corp., Elgin, Ill. The softener has two tanks. Hard water enters at the bottom of one tank, flows up through the zeolite, and over through a pipe to the top of the second tank. It then flows down through the second zeo-



MERCURY LAMP

lite bed and comes out at the bottom of the second tank as soft water.

The softener is said to reduce the amount of water required for back-washing and to have a higher salt efficiency, which gives savings in zeolite. It provides a raw-water filter bed with independent back-washer. The two-flow softener is equipped with a single solo valve to take the complications out of back-washing and regeneration.



SOFTENER

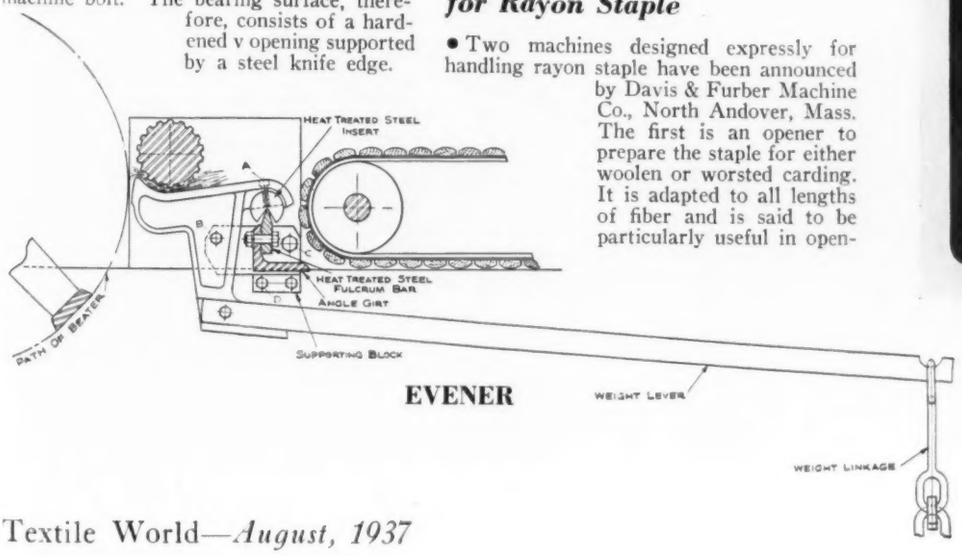
Guide for Attaching Elastic to Underwear

• Production of a new, adjustable guide assembly for attaching elastic to knitted undergarments has been announced by Union Special Machine Co., 400 N. Franklin St., Chicago. The unit, which is designed for use where the elastic is run in continuous strips, stretches the elastic and guides it through the sewing machine. It is so constructed that it can be raised 1½ in. above its normal position to allow the operator to cut the elastic between each garment. In order to operate the device, it is necessary merely to raise the guide, cut the elastic, and then snap the guide back into place.

When in position, the guide is set close to the presser foot of the machine to aid in securing an even, uniform margin. The presser foot used with this guide is constructed in such a manner that the elastic is held in close to the needle, thus further assuring a straight margin. It also permits the raw edge of the garment to be turned with a single lap, thereby eliminating the possibility of frayed edges.

Improved Evener

• Numerous improvements have been made to the No. 7 evener manufactured by Saco-Lowell Shops, 147 Milk St., Boston. In the former construction, the pedal bars were supported on a round steel shaft, and the pedal was constructed so that had it a rather snug fit on the shaft. Because the bearing surfaces were inaccessible for cleaning, they became worn and rough, affecting the sensitivity of the evener. In the new construction, the round pedal shaft has been supplanted by a heat-treated-steel knife bar which has been machined. The knife bar is fastened to a steel cross girt between the side frames. To adapt the pedal to this knife-edge bearing, a steel V-block is secured within the circular opening by a machine bolt. The bearing surface, therefore, consists of a hardened v opening supported by a steel knife edge.



EVENER

The pedal bearing surface being in more or less constant motion, dust, dirt, and leaf, which would have a tendency to lodge here, are said to be worked out. Circulation of air under the picker obviates the collection of moisture, with consequent rusting.

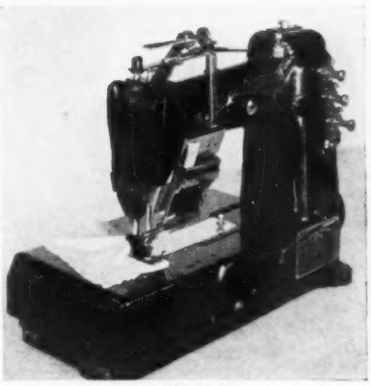
Flowmeter

• Bailey Meter Co., 1050 Ivanhoe Road, Cleveland, Ohio, has developed the Synchro-Meter, an electrically operated flowmeter. Basically, it consists of a transmitting unit, which is operated by a Ledoux-bell flow-measuring mechanism of the type used in standard Bailey mechanically operated fluid meters, and a receiver, consisting of the indicating, recording, and integrating instruments. The transmitter is located at the point of measurement of the variable, and the receiver is located at a place or places convenient for obtaining readings from the instruments as frequently as desired.

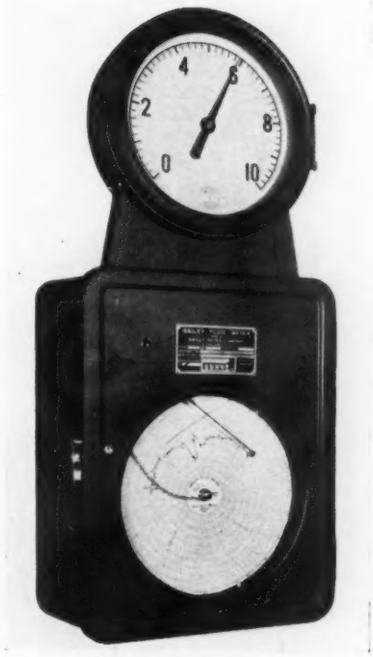
Among the advantages listed by the manufacturer are the following: The transmitter places only a negligible retarding force on the measuring device; the torque developed to operate the receiving element is very large and does not send any reaction back to the transmitter; no adjustments are necessary at the transmitting end.

Opener and Card for Rayon Staple

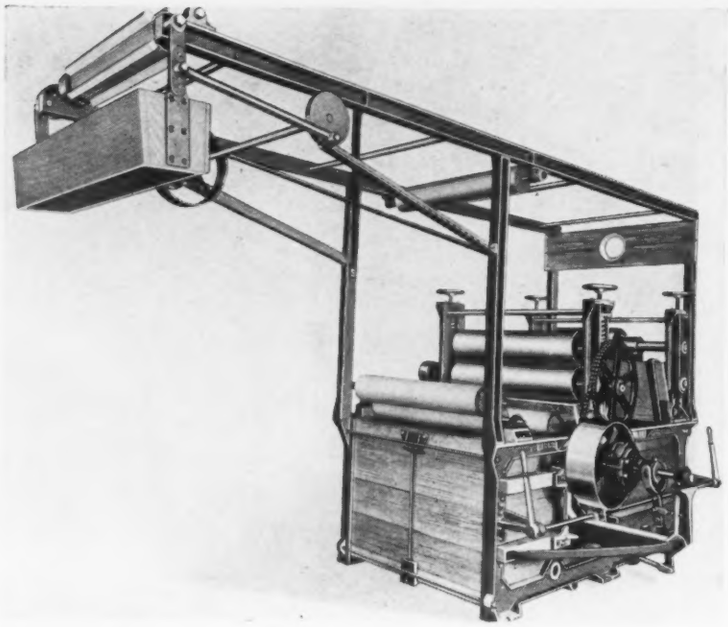
• Two machines designed expressly for handling rayon staple have been announced by Davis & Furber Machine Co., North Andover, Mass. The first is an opener to prepare the staple for either woolen or worsted carding. It is adapted to all lengths of fiber and is said to be particularly useful in open-



GUIDE



FLOWMETER



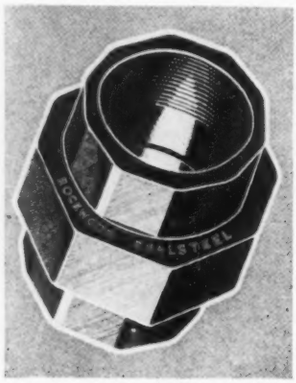
SOAPER

ing and fluffing the high-density bales which are imported from Japan. Production is 1,000 lb. per hour.

The second new machine is a card for handling rayon staple on the worsted system. It has a special feed-end and breast, single cylinder of 60-in. diameter, and is clothed throughout with D & F hardened-point metallic wire. The card is made with a balling head or can coiler, as desired. It is said to turn out a large production of quality work and to require less stripping.

Pipe Union

• The Dualsteel union has been developed by Rockwood Sprinkler Co., 38 Harlow St., Worcester, Mass., to meet the requirements of dyeing and bleaching plants, where change-overs and repairs are frequent and where pipe lines are subjected to the corrosive action of dyeing and bleaching fluids. The union is Parkerized and offers greater resistance to corrosion and greater strength. One of the features is that Parkerizing assures "free breakage" of the parts. The union is recommended for 600-lb. working steam pressure, 2,000-lb. hydrostatic pressure, and 900° F.



UNION

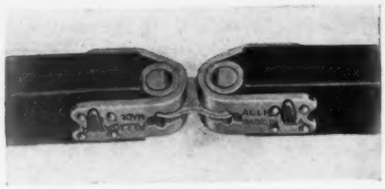
Woolen and Worsted Soaper

• After extensive mill tests, a machine for soaping woolens and worsteds before fulling has been placed on the market by Riggs & Lombard, Inc., Suffolk St., Lowell, Mass. The advantages cited by the manufacturer are uniform soaping and saving in soap. In some instances, savings are said to have run as high as 27%.

V-Belt Fastener

• Ease of application is one of the features of a new Alligator fastener for joining C-section V-belts, of fabric-core, cross-weave construction, announced by Flexible Steel Lacing Co., 4607 Lexington St., Chicago. The fastener is said to make practicable the installation, shortening, or replacement of V belts on the job, without delays or the necessity of tearing down expensive installations.

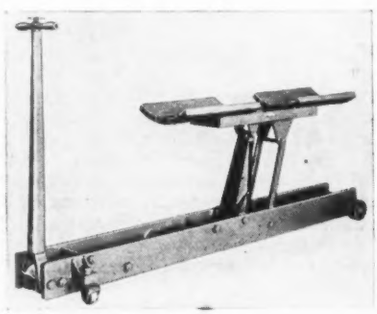
Other features of the V-belt fastener are the double rocker pin supported in bronze bushings and the method of holding the end plate to the belt end without materially weakening the belt or bulging its sides. The rocker pin is made of alloy steel hardened to give long service. No metal touches the pulleys.



COUPLING

Loom-Beam Truck

• A truck for cotton and rayon mills using long beams has been placed on the market by Stackbin Corp., 54 Troy St., Providence, R. I. It is designed to handle any size single or double warp beam, weighing up to 2,000 lb., in the narrow aisles between looms. The cradle, which lowers to within 9 in. of the floor, is raised hydraulically to a height of 28 in. Two brackets, supplied with the truck, are secured to the loom and make it easy to lower the beam into place. The truck is made in two different wheelbases, to fit both large and small looms, and its overall width is 18 in.



BEAM-TRUCK

NEW DYES & CHEMICALS

Antifoaming Agent

Foamex, a new compound for preventing foaming of gelatine, casein, etc., has been introduced recently by Glyco Products Co., Inc., 148 Lafayette St., New York. It is stated that this product successfully inhibits foaming without interfering with the other properties of the product. Addition of as little as 1½ oz. of Foamex to 12 gal. of solution is generally sufficient. It can be added either to the water before making the solution or to the finished solution.

Boil-Off Compound

A new product for use in boiling-off silk hosiery and silk and rayon in other forms has been anounced recently by Quaker Chemical Products Corp., Conshohocken, Pa. This product, Quaker TF-704, is an amber-colored liquid, soluble in water. It is stated that in solution it runs a pH of 9.5 and can, therefore, never be any more injurious to silk or rayon than neutral soap which runs the same pH in solution. For boiling-off of hosiery, the proportions recommended are 10 lb. of TF-704 per 100 lb. of goods to approximately 250 gal. of water, boiling for 1 hr. On other types of work the same amount may be used, or lesser or greater amounts, depending on the nature of the goods.

Silk Soaking Oil

Development of a new silk soaking oil has been anounced by Quaker Chemical Products Corp., Conshohocken, Pa. This oil, known as Quaker TF-660, is said to contain entirely new organic chemicals which give the product the ability to soften the gum quickly and do it more thoroughly

—particularly on hard gum—than is possible with the older types of silk soaking oils formerly made by this company. It is stated also that the product is an antimildew material in itself and prevents any bacteria growth or mildew. For soaking silk for warps the following mixing procedure is recommended: Mix one part of TF-660 with from two to three parts of hot water (temperature of around 160° F.). It is not strictly necessary that the water be hot, but it will facilitate mixing and shorten the length of time required to get the oil in emulsion with the water. This mixture should be thoroughly stirred until uniform, after which it can then be poured directly into the entire amount of remaining water to be used.

Transfer Remover

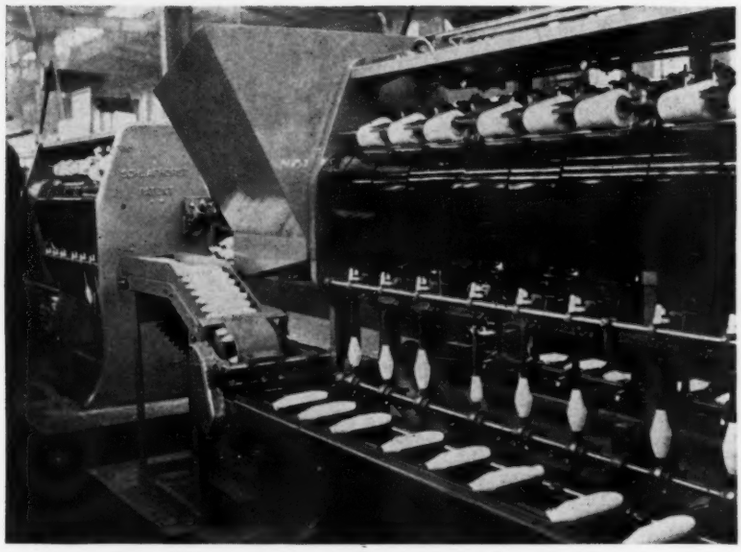
A new transfer remover, Laureltex 340, for use on silk hosiery for redyeing has been placed on the market by the Laurel Soap Mfg. Co., Inc., Tioga, Thompson, and Almond Sts., Philadelphia. The manufacturers state that this new product will remove trade marks on silk hosiery quickly and economically, before stripping and redyeing.

Acetate Dye

E. I. du Pont de Nemours & Co., announces the following new product: Celanthrene Brilliant Blue 2G, an acetate dye producing shades which are both brighter and considerably greener in shade than those obtained with Celanthrene Brilliant Blue; dyeings possess good resistance to light and washing even in pale shades.

Dispersing and Leveling Agent

A new dispersing and leveling agent recommended particularly for use in wool dyeing has been introduced recently by General Dyestuff Corp., 435 Hudson St., New York, N. Y. This product, Leonil O Solution, is said to be unaffected by hard water, acids, alkalis, or salts. The manufacturer states that it has a strong dispersing effect on grease, spinning oils, and other impurities in the goods, thereby helping to avoid damage likely to be caused by such residues. If the goods have retained large quantities of spinning oil, it is recommended that they be boiled for about 20 min. in the machine with 1½ to 8% Leonil O Solution and 2% acetic acid (30%), followed by thorough rinsing Other uses cited are: (1) for dissolving and dyeing of acid, afterchrome, and Monochrome dyes, which, on account of their limited solubility, give trouble in respect to leveling if conditions are unfavorable; (2) when dyeing on a mordant, as a leveling agent and auxiliary to obtain better fastness to rubbing; and (3) as a leveling agent in dyeing wool mixtures consisting of wools of different dyeing behavior.



AT THE LEIPZIG FAIR—One of the interesting machines shown at the Leipzig Trade Fair, held recently in Leipzig, Germany, was a cone winder with automatic feed. Apparently the spinning bobbins are thrown into a large hopper whence they slide by gravity onto an endless conveyor belt, each eventually arriving before the spindle on which it is to be mounted. The spindle to receive a bobbin is placed horizontally; and when it turns to its active position, the spindle previously vertical becomes horizontal and releases its empty bobbin to a conveyor belt in the center of the machine.

NEW PUBLICATIONS

Cotton Utilization and New Industrial Uses; R. J. Cheatham, U. S. Department of Agriculture, Washington, D. C.

Given in this 12-page report are data on utilization of cotton by industries, per-capita consumption by 5-year periods from 1892 to 1935, and new textile and chemical uses for cotton.

Procedure Handbook of Arc Welding Design and Practice; 4th Edition reprinted; Lincoln Electric Co., Cleveland, Ohio. $1.50.

In reprinting this edition of the arc-welding handbook, the publishers have added a 16-page section giving the latest weld symbols adopted by the American Welding Society. Subjects covered include: welding methods and equipment; technique of welding; procedure, speeds and costs for welding; mild steel, structure and properties of weld metal; weldability of metals; designing of arc-welded steel construction of machinery; designing for arc-welded structures; and typical applications of arc welding in manufacturing, construction, and maintenance. A new introduction to the section on designing for arc-welded steel construction of machinery emphasizes the fundamental principles which the designer should keep in mind in approaching the problem of redesigning for arc-welded construction.

How to Run a Lathe; South Bend Lathe Works, South Bend, Ind. 25c.

The 33rd edition of this "machinists" manual contains up-to-date information on all phases of lathe work. In addition, it includes useful shop information of a general nature, such as reference tables and formulas, tables of cutting speeds of metals, application of lathe tools, cutting screw threads, metric screw threads, taper turning and boring, milling and keyway cutting, bushing work, gear cutting, proper application and types of drives, shop hints and short cuts, etc.

Sources of Current Trade Statistics: Market Research Series No. 13; By Jettie Turner, Wholesale Trade Section, Marketing Research Division. Published by U. S. Department of Commerce, Washington, D. C. Price 25c.

A basic source reference book covering practically all current trade statistics published daily, weekly, monthly or quarterly by 40 Governmental agencies and 200 non-Governmental agencies, this volume was planned to serve all interested in current business and economic developments. It should be especially welcome to business firms, trade associations, research people and economists. Major statistics covering all chief industries are included and approximately 3,000 statistical series are listed with names and addresses of the compiling agencies.

NEWS OF SUPPLIERS

• **Universal Winding Co.,** Providence, R. I., announces that W. S. Warren has closed the firm's branch office at Springfield, Mass., and in future will be located in new offices at 10 High Street, Boston, this move being made to permit better service to customers in New England.

• **Veeder-Root Inc.,** manufacturers of counting devices for the textile industry, have moved their Southern sales headquarters to 231 West Washington St., Greenville, S. C.

• **H & B American Machine Co.,** of Pawtucket, R. I., announce that Elmer J. McVey has been made manager of the Charlotte, N. C., office, succeeding the late J. Walter Rimmer.

• **Industrial Lithographic Co.** has opened a branch office at Hickory, N. C. The

company has plants at New York, Chattanooga, Tenn., and High Point, N. C. The company specializes in the manufacture of lithography and dry transfers for the hosiery and knit goods trades.

• **The Mathieson Alkali Works, Inc.,** New York announces the appointment of Robert M. Mannheim as New England district manager with headquarters in the Hospital Trust Building, Providence, R. I. Mr. Mannheim has been a member of the Mathieson organization for the last six years; James R. Harrington, New York metropolitan area representative, will take over Mr. Mannheim's territory in northern New Jersey, while Donald G. Ross replaces Mr. Harrington in New York.

• **Paramount Textile Machinery Co.,** Chicago, announces that, L. H. Oswald, vice-president of the firm, has sailed for Europe to investigate foreign developments in textile machinery and patents.

• **The Bunting Brass & Bronze Co.,** Toledo, Ohio, announces that Frank G. Breisacher has been made assistant sales manager of the replacement and maintenance products department. Mr. Breisacher, who has represented the company for several years as salesman in the Michigan territory, will be succeeded there by E. L. Edwards, of Detroit, who has had extensive sales experience in automotive and industrial lines.

• **American Textile Engineering Co.,** Kearny, N. J., American representatives of the German textile machinery manufacturing firm, Saechsische Textilmaschinenfabrik vorm. Rich. Hartmann A. G., Chemnitz, Sa., announced that the latter company had just celebrated its centenary. The firm makes a complete line of spinning machinery for the textile industry.

• **Wheelco Instruments Co.,** Chicago, has appointed William Printz, New York, as sales manager for the eastern division, with charge of all sales along the Eastern Seaboard. For 20 years Mr. Printz has been associated in the temperature control instrument field.

• **General Refractories Co.,** Philadelphia announce the appointment of the Tennessee Mill & Mine Supply Co., Knoxville, Tenn., as distributor in the Knoxville area. Tennessee Mill & Mine Supply Co. will carry a complete stock of refractories.

• **Riggs & Lombard, Inc.,** Lowell, Mass., announce appointment of R. C. Collins as sales representative in New Jersey, Pennsylvania, Delaware, Maryland, West Virginia and Virginia.

• **Aldox Laboratory Corp.,** Lawrence, Mass., announces that Robert L. Sjostrom has been elevated to the double position of president and treasurer. The firm is installing new machinery and expects to increase its personnel in fall.

• **U. S. Textile Machine Co.** is now located in the new plant at Poplar & Park Sts., Scranton, Pa., which more than triples the company's floor capacity.

• **Portland Cement Association,** Chicago, Ill., announced election of Frank T. Sheets as president, effective Sept. 1, succeeding Edward J. Mehren, resigned. Mr. Sheets for the last four years has been consulting engineer and director of development of the association, and has long been widely known in highway activities.

P. J. Wood, for many years a textile finishing executive, who is now on the staff of Royce Chemical Co. as reported in this department last month.

• **John B. Astell & Co.,** New York, distributors of B & W seamless carbon steel boiler tubes and alley tubes, announce that H. B. Allen, formerly New York district sales manager of The Babcock & Wilcox Tube Co., has been elected vice-president of the company.

• **Saco-Lowell Shops,** Saco, Me., will be reorganized under a plan which was approved by stockholders last month. David F. Edwards, president, announced that net profit for the first five months of this year, without allowing for any undistributed profits tax liability, totaled $395,429. It was stated that the reorganization plan would enable the company through dividend payments to avoid most of its liability under the undistributed profits tax.

• **Byrd Miller,** for many years head of the Greenville, S. C., office of Clinton Co., recently resigned to open a textile and bleachery supply firm of his own. He will represent Roger W. Cutler, of Boston and Greenville, Piel Bros. Starch Co., James A. Starck, and Ton-Tex Corp.

• **Seydell Chemical Co.** announces appointment of Alexander W. Anderson as eastern representative. He will reside at Edgewood, R. I.

Rayon Salesmen Plan Love Feast

The recently formed Denier Club, membership in which is confined to rayon and synthetic yarn salesmen in the New York area, has plans in the making for an outing in September. If it succeeds as well as the pleasant parties of the Rayon and Synthetic Yarn Peddlers Association of New England, which has held nine outings, it will really be something. Like the older organization, the Denier Club's objectives are strictly social, and customers will be (almost) forgotten for the day. Officers are: President, R. G. Daly, Celanese Corp.; vice-president, J. H. Hammes, American Viscose Corp.; secretary-treasurer, Jerome Lewy, North American Rayon Corp.

• **Clinton Co.,** Clinton, Iowa, starches, announces that Dana Alexander is now associated with the company.

• **Carrier Corp.,** Newark, N. J., has acquired the former Franklin plant, at Syracuse, N. Y., comprising 1,250,000 sq.ft. The plant was taken over recently for taxes by the City of Syracuse, and was bid in at public auction for Carrier by L. R. Boulware, vice-president and general manager. It is expected that 80% of the administrative and productive operations of the air conditioning company will be shifted to Syracuse within one year.

• **B. F. Goodrich Co.,** Akron, Ohio, has announced the appointment of three new Koroseal representatives who will contact the textile industry: O. F. Fentriss, for the States of Georgia, Alabama, Mississippi and Tennessee, with headquarters in Atlanta; J. O. Cole for North Carolina, South Carolina and Virginia, with headquarters at Greenville, S. C.; F. W. Long for Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont, with headquarters in West Newton, Mass.

• **The American Cyanamid & Chemical Co.,** has established a new laboratory at its Charlotte, N. C., plant, which will greatly increase its facilities for research and technical work in connection with the textile finishing materials at this plant.

• **General Electric Co.,** Schenectady, N. Y., reports that orders received during the first six months this year amounted to $217,265,619, an increase of 59% over the $136,968,597 received during the same period last year.

• **Arnold, Hoffman & Co., Inc.,** Providence, R. I., announces that Edwin H. Arnold has been elected first vice-president and treasurer to succeed the late Edward M. Johnson.

• **Hygrade Sylvania Corp.,** Salem, Mass., reports that for the six months ending June 30, 1937, net income after provision for all State and Federal taxes, was $590,315.12, equal after dividend requirements for the period on the $6.50 preferred stock, to $2.55 per share on common stock. This compares with $410,734.29, equal to $1.76 a share earned on common for the first six months of 1936. The corporation also announces opening of an executive sales office at 10 Post Office Sq., Boston. The Hygrade Lamp division plants at Salem, Mass., and St. Marys, Pa., were closed from July 19 to Aug. 2, giving employees two weeks' vacation with pay.

• **Hancock Valve Division, Consolidated Ashcroft Hancock Co.,** Bridgeport, Conn., announces the addition of James A. Gibbons to its field sales organization. He will specialize on industrial power plant and public utility construction work. He was formerly with Peabody Engineering Corp., New York, manufacturers of combustion equipment where he was in charge of advertising, sales promotion and publicity.

• **Sonoco Products Co.,** Garwood, N. J., unit, has had an expansion program under way representing a cost of $200,000. This company has just completed two new storage and manufacturing buildings at Hartsville, S. C.; total cost $400,000.

• **Textile Shop,** Spartanburg, S. C., is constructing a modern brick plant with 5,000 sq.ft. of floor space, double the amount now occupied.

• **New Departure Division, General Motors Corp.,** Bristol, Conn., was dinner host recently to 325 employees who had served 20 years or more with the company; each was presented with a gold service button designating the number of years of service. Those having served more than a quarter-century (123 in all) received Hamilton presentation pocket watches appropriately inscribed.

• **Westinghouse Electric & Mfg. Co.,** East Pittsburgh, Pa., announces appointment of H. F. Boe as commercial manager. Mr. Boe will have two headquarters, one in the Union Bank Building at Pittsburgh, the other at 150 Broadway, New York.

• **Standard Mill Supply Co.,** Providence, R. I., announces that Wesley M. Dynes, formerly New England representative of the E. H. Jacobs Mfg. Co., is now associated with the first-named firm.

• **Warwick Chemical Co.,** of Providence, R. I., has appointed: Harold W. Rose as general sales manager of its Impregnole Water-Repellent Division, located in New York City; Charles M. Hayman, formerly with Cantor-Greenspan Co., rayon weavers, as assistant manager of the impregnole division; Harry N. Karpen as general supervisor of the technical laundry service division.

UNUSUALLY WIDESPREAD interest is being shown in the fifth international heating and ventilating exposition which will be held Jan. 24 to 28 at Grand Central Palace, New York, the exhibition management reports. Many reservations for space have been taken, and the event promises to break all records both in exhibition space and attendance, it is stated. Contracts have been signed for space by practically every leading exhibitor of air conditioning equipment though the event is still nearly six months away.

• **Hercules Powder Co.,** Wilmington, Del., announces the addition of Iver W. Fallstrom to the technical staff of its Providence Drysalters Division at East Greenwich, R. I.' Mr. Fallstrom has spent five years at the Aspinook Co. as chief chemist, and for the last five years has been at Sayles Finishing Plants.

• **Armstrong Cork Co.,** Lancaster, Pa., announces the following executive changes: H. P. Smith, Jr., has been elected vice-president in charge of manufacture; John J. Evans, Jr., has been appointed manager and George W. Kittridge assistant manager of the personnel department; S. E. Dyke becomes production manager; C. F. Hawker, chief engineer; F. B. Menger, assistant chief engineer and chief project engineer; and J. A. Cummings, general superintendent of the closure plant at Lancaster, Pa. Mr. Cummings will be assisted by two new superintendents, W. L. Clausen and E. D. Kemble. George A. Reinhard, Jr., has been named assistant chief project engineer.

• **West Point (Ga.) Foundry & Machine Co.** announces the appointment of T. J. Lane as manager of sales, and O. P. Roberts as plant manager. Mr. Lane has been with this company for some years, and Mr. Roberts for many years has been with American Castings Co., Birmingham, Ala. Both changes were effective July 1, 1937.

• **Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.,** Passaic, N. J., announces an unusual record made by two of their Condor Compensated Belts. Two horizontal water-wheel drives at the Prospect Mills, Inc., Lawrence, Mass., equipped with Condor Compensated Belts, were submerged for from five to twelve days by two floods. After each flood, the belts were dried, cleaned, dressed and put back to work, and now are operating as well as when installed.

Textile World Analyst

TEXTILE WORLD'S index of textile mill activity for the first half of 1937 shows a rate approximately 25% above the corresponding period of 1936, and 35% above the first half of a "normal" year (1924–31 average). . . . Each fiber registered an increase in consumption this year as compared with last: Cotton was 26% up, wool 20% up, silk 15% up and rayon 14% up. . . . Carded yarn and fabric margins held remarkably steady in the face of a declining cotton market. . . . Although the wool group remained practically unchanged in TEXTILE WORLD's price index series, actually the market hit bottom about the first of July and was back at the June 1 level by Aug. 1. This was in contrast to cotton, which continued to decline.

Textile World's Price Index Numbers

STARTING with January, 1936, TEXTILE WORLD has revised its price index numbers to a 1923-25 base, to correspond with current statistical practices. Those who wish to continue with indices based on July 1, 1914, for chart purposes or otherwise, can secure conversion factors to change the new figures to the old by writing TEXTILE WORLD, Statistical Dept., 1427 Statler Bldg., Boston, Mass. Figures on **cotton manufactures, Aug. 1, 1933 to Jan. 6, 1936 include processing tax.**

	Cotton Index Numbers				Wool Index Numbers				Silk Index	Rayon
Date	Cotton	Yarns	Gray	Colored	Wool	Tops	Yarns	Cloth	Raw-Silk	Index
1923-25	100	100	100	100	100	100	100	100	100	100
1930 ave.	50	61	61	72	58	61	72	90	109	46
1931 ave.	32	68	46	59	46	49	59	71	32	32
1932 ave.	24	37	37	60	36	40	52	57	21	28
1933 ave.	39	56	55	50	53	59	62	80	21	26
1934 ave.	61	67	70	62	63	70	75	91	17	25
1935 ave.	60	68	67	69	56	58	70	88	22	24
1936 ave.	45	63	63	68	72	78	76	93	23	25
Oct. 1935	57	68	68	69	60	61	73	92	27	24
Nov. 1935	60	70	69	72	62	65	75	92	27	24
Dec. 1935	60	71	69	72	64	66	76	92	26	24
Jan. 1936	48	67	63	68	67	73	75	93	26	24
Feb. 1936	42	62	58	67	72	81	77	93	24	24
Mar. 1936	42	61	57	66	73	81	77	93	23	24
Apr. 1936	43	60	55	64	68	75	76	90	22	24
May 1936	43	57	54	64	67	75	76	90	21	24
June 1936	44	58	57	65	67	75	76	90	20	25
July 1936	48	61	61	70	69	75	75	90	22	26
Aug. 1936	45	62	63	70	70	75	74	90	23	26
Sept. 1936	45	62	63	70	70	75	74	90	22	26
Oct. 1936	45	64	67	71	71	75	74	92	23	26
Nov. 1936	45	65	74	72	78	82	76	100	26	26
Dec. 1936	48	72	80	74	87	90	84	105	26	26
Jan. 1937	48	73	81	76	90	93	88	108	27	26
Feb. 1937	48	74	78	76	90	92	90	108	27	26
Mar. 1937	53	78	80	78	87	88	90	112	27	26
Apr. 1937	53	80	82	80	84	86	90	112	27	27
May 1937	49	75	76	78	82	84	89	112	24	27
June 1937	47	70	71	78	78	82	88	112	25	27
July 1937	45	65	67	78	78	82	82	112	26	27

Fabric and yarn manufacturing margins follow:

TABLE I. CARDED FABRIC MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933..	21.4	January, 1936..	17.2
October, 1933.	19.1	February, 1936.	16.5
January, 1934	18.4	March, 1936...	15.5
April, 1934...	17.6	April, 1936....	14.3
July, 1934....	15.5	May, 1936.....	14.3
August, 1934..	16.6	June, 1936.....	15.3
September, 1934	18.6	July, 1936.....	16.9
October, 1934..	17.4	August, 1936..	18.0
November, 1934.	15.8	September, 1936	18.4
December, 1934.	16.2	October, 1936..	21.2
January, 1935..	16.2	November, 1936	25.4
February, 1935.	16.0	December, 1936.	28.1
March, 1935...	15.9	January, 1937..	28.6
April, 1935....	16.1	February, 1937.	26.2
May, 1935.....	16.0	March, 1937....	25.6
June, 1935.....	16.5	May 1937.....	23.1
July, 1935....	15.2	June, 1937.. ..	21.2
August, 1935...	17.1	July, 1937....	20.1
September, 1935	17.9	July 7....19.9	
October, 1935..	17.7	July 14....19.6	
November, 1935.	16.4	July 21....20.2	
December, 1935.	16.2	July 28....20.5	

TABLE II. CARDED YARN MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933...	23.5	January, 1936..	18.4
October, 1933..	20.0	February, 1936.	17.5
January, 1934..	18.3	March, 1936...	16.3
April, 1934....	15.9	April, 1936....	15.6
July, 1934.....	14.7	May, 1936.....	14.8
August, 1934...	15.3	June, 1936.....	14.6
September, 1934	15.6	July, 1936.....	15.0
October, 1934..	14.6	August, 1936..	16.5
November, 1934.	13.5	September, 1936	16.5
December, 1934.	13.5	October, 1936..	17.2
April, 1935....	14.1	November, 1936	18.0
September, 1935	15.4	December, 1936.	20.6
October, 1935..	15.8	January, 1937..	20.8
January, 1935..	13.5	February, 1937.	21.2
February, 1935.	13.9	March, 1937...	21.3
March, 1935...	14.4	May, 1937.....	21.2
May, 1935.....	13.8	June, 1937.....	19.3
June, 1935.....	14.5	July, 1937.....	17.8
July, 1935.....	14.3	July 7....18.2	
August, 1935..	15.3	July 14....17.7	
November, 1935.	16.3	July 21....17.4	
December, 1935.	16.3	July 28....17.7	

The Personal Page

C. W. Byrd, treasurer of Davidson (N.C.) Cotton Mills, Inc., has been elected president of the concern also. He succeeds **T. H. Webb,** a former president of the American Cotton Manufacturers' Association, who resigned to devote his time to the Charlotte office of Geigy Co.

R. Donald Harvey has been appointed agent and manager of the Lindale, Ga., division of Pepperell Mfg. Co., succeeding the late Capt. H. P. Meikleham. Mr. Harvey was formerly assistant agent.

E. I. Nugent has been placed in charge of the New York office of Pepperell Mfg. Co. and **Ed Synan** will manage the gray goods department.

Charles W. Knott, formerly secretary-treasurer of Hollar Hosiery Mills, Inc., Hickory, N.C., is now operating his own hosiery plant in that city.

George T. Jarvis, 2nd, has been elected president of Elmira (N. Y.) Knitting Mills, **Samuel O. Garcia** has been named vice-president, and **Robert S. Chase,** secretary-treasurer.

Walter H. Richter, president of Warner Woven Label Co., Paterson, N. J., has been elected president of Woven Label Manufacturers' Association, Inc., of the National Federation of Textiles.

Edward L. Martin, formerly vice-president, has been elected president of Booth Mfg. Co., New Bedford, Mass., succeeding the late Charles E. Riley.

Officials of newly organized Carter Fabrics Corp., Greensboro, N. C. Left to right, Harry C. Carter, vice-president in charge of manufacturing and assistant to the president; W. J. Carter, president and treasurer; R. M. Reid, secretary and assistant treasurer. W. J. Carter was formerly a vice-president of Burlington Mills, and, at present, is executive vice-president and general manager of S. Slater & Sons, which position he will retain. Harry Carter was formerly superintendent of two different plants of Burlington Mills. Mr. Reid also was with Burlington prior to his present connection.

Charles H. Whitney has retired from his New York position as sales agent for Continental Mills, Lewiston, Me., and has been succeeded by his former assistant, **H. E. Banks.**

J. W. Norwood has been made superintendent of the recently opened Durant (Miss.) Mfg. Co. The company is a subsidiary of Real Silk Hosiery Mills, Inc., Indianapolis, Ind.

S. C. Mahaffey, formerly night superintendent of Frank Ix & Sons, Inc., Charlottesville, Va., has accepted a similar position with Middletown (Conn.) Silk Co.

J. Manning Bolt is the new superintendent of Gossett Mills, Williamson, S.C. He was overseer of weaving at Brandon Mills, Greenville, for a number of years.

He is also president of H & B American Machine Co., Pawtucket, R. I. William C. Zylstra, in charge of manufacturing operations of the mill, has been elected to a vacancy on the board of directors.

Chas. B. Nichols, who has been treasurer of Appleton Co., Anderson, S. C., for the last two years, has resigned to become connected with Lawrence Mfg. Co., Lowell, Mass.

W. Thomas Love, Jr., has been appointed treasurer of Spencer Mountain Mills, Ranlo, N. C., succeeding his late father, W. Thomas Love, Sr.

Max A. Freschl has resigned as vice-president of Holeproof Hosiery Co., Milwaukee, Wis., but continues as a director.

H. G. Woodbury has been appointed manufacturing agent for Wamsutta Mills, New Bedford, Mass. Through error, his name was given as H. G. Woodward in our last issue.

A. M. Durand has resigned as managing director and general manager of Corona Velvets, Ltd., Drummondville, Que., Canada.

Charles H. Dimick has been appointed general manager of Textile Dyeing & Printing Co., Fair Lawn, N. J., assuming the duties of **William Alexander** and **Norman Castle,** who resigned as general manager and sales manager, respectively.

Harold W. Whitcomb, manager of Lumb Knitting Co., Pawtucket, R. I., division of Marshall Field & Co., has been appointed director of purchases for the company, with headquarters at Spray, N. C. He has been succeeded at Pawtucket by **Charles P. Wilson.**

Ronald C. Forrest, of Oakland, Cal., has become resident manager of California Cotton Mills Co., Selma, Ala., succeeding **L. A. Ward,** resigned.

Harry J. Haynsworth and **J. C. Cowan, Jr.,** were recently elected vice-presidents of Burlington Mills Co., Greensboro, N. C.

R. H. Tetley, who for many years has traveled for Holeproof Hosiery Co., Milwaukee, Wis., in the southwestern area, resigned July 1 to become sales manager for Baker-Moise Hosiery Mills, Dallas, Tex.

Samuel Ross, veteran member of the board of trustees of the New Bedford (Mass.) Textile School, has been reappointed by Gov. Charles F. Hurley, together with **John A. Shea** of Taunton. Three new members named to the board are **Raymond McEvoy** of Stoughton, **James B. Sullivan** of New Bedford, and **Ernest L. Robitaille** of Taunton.

Harry K. Rutherford has resigned as general sales manager of H. C. Aberle Co., Inc., Philadelphia.

James F. Barksdale, of Spray, N. C., who has been connected with Marshall Field & Co. textile mills in that area for the last sixteen years, has been transferred to the merchandise office in New York, where he is associated with **G. L. Ivie,** formerly of Leaksville, N. C., but but for the last several months merchandise manager of the company.

H. G. Simonds, assistant treasurer of Pacific Mills, Boston, has been promoted to the position of vice-president. **Henry G. Nichols,** president and treasurer of Otis Co., Ware, Mass., joined the organization on Aug. 1 as vice-president.

Lucas Gardiner, for the last twelve years with Seamons & Cobb Co., Hopkinton, Mass., has become vice-president and secretary of Berkshire Thread Corp., New York.

James Q. Purcell, former sales manager of Waypoyset Mfg. Co., Central Falls, R. I., now in process of liquidation has joined the brokerage firm of Nickel, Barrett, Lieberman & Quinn Inc., New York, where he will specialize on spun-rayon cloths.

Arthur S. Jarrett, formerly assistant general manager of Springs Cotton Mills, Gayle Plant, Chester, S. C., is now general superintendent of Highland Park Mfg. Co., Mill No. 3, Charlotte, N. C.

Harry W. Horstman has been appointed assistant vice-president of Commercial Factors Corp., New York. Mr. Horstman will continue his duties as head of the Credit Department.

Samuel Oshansky recently resigned his post as stylist and head of sales promotion at I. A. Wyner & Co., manufacturers of knit fabrics, to assume a position with the cotton house of Ameritex, New York.

Alexander C. Mackey, formerly general manager and treasurer of Peerless Hosiery Dyeing Co., Inc., Pleasantville, N. J., has joined the staff of Onyx Oil & Chemical Co., Jersey City, N. J., in the capacity of consultant and special field representative on problems of hosiery dyeing and finishing.

J. A. White, formerly superintendent of Cleveland Cloth Mills, Shelby, N. C., has been made local manager of Slater (S. C.) Mfg. Co., and assistant to **W. J. Carter,** executive vice-president and general manager of S. Slater & Sons.

Fred M. Stevens, formerly with National Woolen Co., Cleveland, Ohio, is now associated with Salter Mills, manufacturers of reworked wool, and M. Salter & Sons, woolen rag dealers, both of Saugus, Mass.

George Miller, formerly with Blackinton (Mass.) Co., has become associated with Colonial Woolen Mills, Cleveland, Ohio, styling and selling the product.

Dr. Thomas Nelson, dean of the Textile School of North Carolina State College, Raleigh, N. C., is visiting textile schools and manufacturing plants in England and the Continent.

Eugene Messner has discontinued his own concern, Eugene Messner, Inc., and joined Arnold Sales Corp., New York.

Obituary

W. W. Coriell, aged 63, formerly vice-president of William Whitman Co., New York, president of Nashawena Mills, New Bedford, Mass., and president of Association of Cotton Textile Merchants of New York, died at his summer home, Harwich, Mass., on July 24. Mr. Coriell retired from active business in 1936.

William F. Grover, Jr., aged 41, owner of Kent Hosiery Mill, Dover, Del., died last month.

David G. Bosley, superintendent of the Portage, Pa., plant of Century Ribbon Co., died recently.

James A. Austin, for eight years New England editor of *Textile World*, died on Aug. 8 as result of injuries received in an automobile accident near Westhampton, L. I. He is survived by his parents and two children. He was in his 37th year.

In early 1918 he entered the military academy at West Point, but did not continue a military career when the Armistice ended the emergency while he was still in training. He transferred to Dartmouth and was graduated there in 1922. For four years he held various positions in textile manufacturing in New England, and in 1926 joined his father's cotton yarn firm in New York. His father is James Austin of the American Thread Co., dean of the cotton yarn business and still active after 59 years association with the trade. In 1929 young Austin joined the editorial staff of this paper. He conducted the "Overseers' Roundtable" for several years, and was instrumental in shaping the succeeding feature, "The Overseers' Corner." Numerous mill articles have come from his pen.

It is with sincere regret and feeling of personal loss that his associates place here this brief memorial to Jim Austin.

James C. Pringle, aged 62, for the last twenty years an overseer at Cocheco Woolen Co., East Rochester, N. H., died on July 30.

Samuel Neslin, aged 46, treasurer of Kapo Silk Dye & Print Works, Inc., Haledon, N. J., died at the Hotel Lincoln, not long after attending a meeting of the Guild of Textile Printers, of which he was president. Mr. Neslin was a leading factor in the group which secured the services of Gen. Hugh S. Johnson to make a survey of the silk and rayon printing industry.

James Jennings, former president of Jennings Silk Co., Holyoke, Mass., died on July 8 at his home in Florida.

Wallace C. Bobo, aged 54, prominently identified with the textile industry for a number of years, and formerly general manager of Judson Mills, Greenville, S. C., died at his home last month. He was connected with Gossett Mills, Anderson, for about a year and a half, after which he organized and operated Bobo Weaving Mills, Inc., Spartanburg.

Thomas Hill, aged 54, president of Richland Hosiery Mills, Robesonia, Pa., and long prominent in the New York market, died in New York on July 21.

Barry Hayes, aged 75, president of Toronto Carpet Mfg. Co., died suddenly at his home in Toronto, Ont.

Cleveland Douglas Welch, aged 54, vice-president and agent of Cramerton (N. C.) Mills, Inc., died at his home last month.

Martin P. Hines, sales representative in the Providence, R. I., area for the New York concern of Hooker & Saunders, Inc., died in Providence on July 17.

Charles S. Kelley, aged 90, head of the brokerage and banking firm of Sanford & Kelley, New Bedford, Mass., died in New Bedford on July 21.

William G. Broadway, aged 62, for more than 40 years with the old firm of Smith, Hogg & Co., New York, before its reorganization several years ago, died at his camp in Maine on July 14.

B. E. Byrd, aged 76, inventor of the Boyce Weavers Knotter, died last month at Fort Lauderdale, Fla.

Harry Parish Meikleham

Captain H. P. Meikleham, aged 65, agent of Pepperell Mfg. Co., Lindale, Ga., died in New York on July 24. For 35 years Cap. Meikleham was in charge at Lindale, both for Massachusetts Cotton Mills and for Pepperell, which purchased the plant in 1927. He ruled as a benevolent dictator and was noted as a rugged individualist, a shrewd manufacturer, a charming host, and, like an old sea captain, a teller of tall stories. This last ability was the pride of his life —next to a love of direction, perhaps— and he never took a back seat to anyone.

William Park, aged 76, president and treasurer of Riverside Woolen Mills and William Park & Sons, Inc., Stafford, Conn., and founder in 1894 of Niantic Mfg. Co., East Lyme, Conn., which he sold in 1906 before acquiring the Riverside mill, died June 29.

J. Harry Bunn, Canadian-born superintendent of Henderson (N. C.) Cotton Mills, died suddenly on July 14.

H. Parker Willis, aged 62, former editor of the New York *Journal of Commerce,* died at his summer home in Oak Bluffs, Mass., on July 18.

Edward M. Johnson, aged 58, vice-president, secretary, and treasurer of Arnold, Hoffman & Co., Inc., Providence, R. I., died at his home in East Providence on July 7th. After completing his education, he immediately entered the employ of Arnold, Hoffman & Co. Inc., and his entire business career was with that concern. He was elected secretary in 1919, vice-president in 1924, and treasurer in 1925.

...Free... For the Asking

READERS interested in literature reviewed on this page, may secure copies by writing to TEXTILE WORLD, 330 West 42d St., New York, giving their company connection.

Motors. Westinghouse Electric & Mfg. Co. folder describes new heat-exchanger principle of cooling self-cleaning ball bearings, tested insulation, and other characteristics of new line of Type CS squirrel-cage motors.

Bobbin Cleaners. Terrell Machine Co., Inc. Illustrated booklet presents cost-reducing advantages, recent improvements, and other information about Termaco roving cleaner, with photographs showing application in well-known cotton mills.

Stainless Steel. Republic Steel Corp. Booklet describes proper methods for welding stainless steel by electric arc, gas, seam, spot, projection, and atomic hydrogen methods; also includes table showing physical, electric and mechanical properties of thirteen types of Enduro stainless steel.

Belts. Rockwood Mfg. Co. Catalog No. 795 contains complete listing of applications for company's single groove V-belts, with specifications, prices, and other data.

Chains. Whitney Chain & Mfg. Co. Catalog V-125, 96 pages, thumb-indexed, covers company's line of roller chain sprockets in stock and made-to-order sizes, complete with dimensions, prices, chain-length calculations, and other data.

Corrosion-Resistant Equipment. International Nickel Co., Inc. Booklet discusses use of Monel and other nickel alloys for chlorine and peroxide bleaching, with photographs and data describing use of company's product in various types of textile mills, especially finishing plants and hosiery and cotton yarn dyeing establishments.

Instruments. Bristol Co. Bulletin describes construction and simplified operating principle of company's recently developed round-chart potentiometer pyrometers, with photographs of samples of 12-in. round charts; cites available ranges.

Pumps. Worthington Pump & Machinery Corp. Bulletin L-711-B2 describes features, advantages, and uses of company's horizontal dry vacuum pumps, types HBV, HBV-2, HSV, and HSV-2, with list of sizes.

Mothproofing; Dyeing. General Dyestuff Corp. Folder covers description and applications of Eulan NK and Eulan NKF extra, citing advantages of these water-soluble mothproofing agents. New color card, "Dyeings Fast to Seawater on Wool Yarn," shows shades produced with suitable acid dyes, Palatine Fast colors, and chrome colors according to the chromate and chrome-topped method.

Caustic. Pennsylvania Salt Mfg. Co. Bulletin discusses properties

of caustic soda and its water solutions; gives sodium hydroxide content of commercial caustic soda; information on unloading and handling of various strengths of liquid caustic soda; tables covering density, gravity, and other data; suggests typical arrangements for unloading and storage.

Corrosion - Resistant Metals. International Nickel Co. Folder features money-savings effected by use of Monel utensils, such as pails, dippers, scoops, etc.

Valves. Homestead Valve Mfg. Co. Pocket-size folder gives construction, operation data, prices, and dimensional information on company's line of quarter-turn valves, including blow-off valves.

Drawing-Roll Covering. Carborundum Co. and Silk City Metals Coating Co., Inc. Folder describes characteristics and applications of "Texalox," citing seven chief advantages, and featuring its use for all types of textiles, from fine grit surfaces for silks and rayons to coarse surfaces for cotton, etc.

Lighting. General Electric Vapor Lamp Co. Booklet describes newly improved Cooper Hewitt lamps, with data on 33-in. and 50-in. lamps as redesigned for better industrial lighting, including information for computing proper spacing of lamps to obtain any given illumination level.

Solvents. Carbide & Carbon Chemicals Corp. Wall chart, 20x 26 in., designed to serve users of solvents; permits quick comparisons of the important properties of 90 commonly used solvents; chart has table of physical properties on one side, and on the other three graphs showing relative evaporation rates of different solvents which are helpful in formulating lacquers, varnishes, polishes, and other industrial products.

Pigment Dye.—Dyestuffs Division, Organic Chemicals Dept., E. I. duPont de Nemours & Co. Booklet defines uses of company's recently announced Monastral Fast Blue BS, stating forms in which this product is available and covering its application in coated textiles, textiles, and other fields; contains samples of shades obtained with this new pigment.

Condensate-Return Units. Cameron Pump Division, Ingersoll-Rand Co. Bulletin 1972-B describes construction, special service features, and general uses of Motorpump condensate return units, together with installation and dimension data and specifications.

Water Treatment. Leeds & Northrup Co. Describes use of Micromax pH recording and controlling equipment for improved corrective water treatment, with information on installation and maintenance and equipment specifications.

Bearings. Fafnir Bearing Co. Circular gives specifications, features, dimensions, and mounting data on company's improved rubber pillow block, featuring the wide inner-ring ball bearing with self-locking collar.

Motor Control. Allen-Bradley Co. Booklet gives history and performance facts on solenoid motor control, pointing out by questions and answers and with sketches the difference between this product and the clapper type starter.

Switch Gears. General Electric Co. Booklet supplies general information on switching apparatus, covering in tabloid form, 137 products from company's switchgear line, with application, rating, and important features of each product.

Traffic. Metropolitan Life Insurance Co. Report on "Functions of the Traffic Manager" describes what various companies, representing a cross-section of industry, are doing to achieve efficient and economical transportation of their purchases and products.

Miscellaneous. June *Parks' Parables*, Parks-Cramer Co., has essay on "Why Textile Mill Employees Open Windows," analyzing the problems underlying that question and the application of company's automatic Airchanger thereto; July *Oxy-Acetylene Tips*, Linde Air Products Co., has article describing new method of cutting stainless-clad and nickel-clad steel plate; June *Rayon Warp Sizing Specialist*, Chas. B. Johnson, contains articles on: "North Carolina Mill Finds Temperature Control a Profitable Investment"; "Will Rayon Come Mainly From Cotton?"; and "Should You Wait for the Last Word in Sizing?"

TEXTILE WORLD'S

Cotton Digest

IF I were a buyer of cotton goods, I would begin to accumulate merchandise." . . . . . This statement by Wm. D. Anderson, president of Bibb Mfg. Co., will arouse widespread interest not only because of the reputation of the spokesman but because of certain favorable undercurrents now noticeable in Worth Street. The reasons for Mr. Anderson's optimism are all sound: absence of serious accumulation of stocks of goods; probability of further increases in manufacturing costs; expectation of improved business conditions in the fall. . . . . True, the raw material situation is unpredictable right now but Mr. Anderson states: "I would assume that any probable decline in cotton will be more than offset by increases in cost of production." . . . . Like all of his statements, this last one will have the most careful consideration of sellers and buyers.—*Editor.*

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Pickard Heads Alabama Assn.—W. B. Pickard, of the Nashua Mfg. Co., Cordova, Ala., was recently elected president of the Cotton Manufacturers Association of Alabama, succeeding Scott Roberts, of Anniston, who has served as president for the last 25 years. Mr. Roberts was named chairman of the board. R. W. Jennings, of West Point, Ga., was elected vice-president, and Neil P. Stern, of Anniston, was selected to serve as general counsel. New directors include Fred Tyler, Anniston, George S. Elliott, Huntsville, Paul A. Redmond, Birmingnam, Ben Russel, Jr., Alexander City, L. E. Lane, Talledega, B. B. Comer, Jr., Birmingham, R. Paul Clark, Gadsden, B. G. Stumberg, Tallahassee, and A. G. Cook, Montgomery. Provision was made for rotation of offices in the future.

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Cotton Acreage Over 34,000,000—The 1937 cotton planting area in the United States was estimated last month to be 34,192,000 acres, an increase of about 3,300,000 acres over last year, according to the Department of Agriculture. Excellent weather conditions throughout July caused private estimates of possible crop to increase rapidly. Government estimate of Aug. 9 placed production at 15,593,000 bales.

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July Curtailment—There was considerable curtailment among cotton mills during July, especially among the yarn mills in the vicinity of Gastonia. Many of these plants shut down from one to two weeks, and others stopped some machinery or departments. It is estimated that of the 700,000 producing combed-yarn spindles, from 200,000 to 300,000 were shut down one week or longer. Curtailment was less obvious in other branches.

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Markets React to Cotton Drop—Following a brief spurt early in July, with print clothes advancing ⅝ to ¾c. yd., the cotton gray goods market practically dried up. Prices fell off to early lows toward the end of the month, and, in some instances, to new lows. However, many feel buyers' stocks have been appreciably reduced by increased consumer absorption. Sales, shipments and inquiries in the cotton-yarn markets during July improved over June, although prices dropped 2 to 3c. before the month ended due primarily to the raw cotton situation. Curtailment among combed-yarn mills helped their August position, and prospects for the next period were good.

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Report on Combed Marquisettes—A report entitled "Cotton Utilized in Combed Marquisettes," describing quantity and quality of cotton used, consumer costs, uses of fabric, etc., has just been published by R. J. Cheatham, senior cotton technologist, and Rodney Whitaker, agricultural economist, U. S. Department of Agriculture.

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India Improving Cotton—Quality and production of Indian cotton is to be improved if possible by the Indian Central Cotton Committee which is financing 17 schemes for extension of improved strains of seed and has sanctioned funds for starting one more.

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Beatty Heads Carolina Warehousemen—Organization of a Carolina Cotton Warehouse Association was effected last month at Charlotte, N. C. Francis J. Beatty, secretary and treasurer of the Standard Bonded Warehouse Co., was elected president, and Charlotte was chosen as permanent headquarters. The organization will affiliate with National Cotton Compress and Cotton Warehouse Association.

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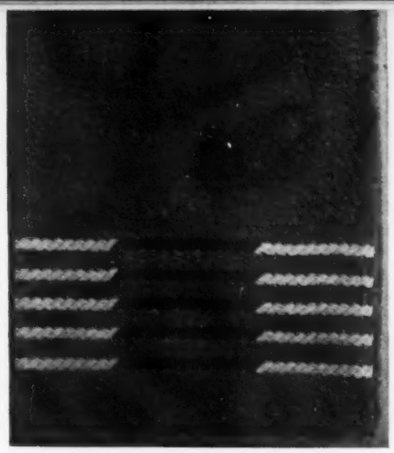
To Curb False Packing—A tag has been devised by the Bureau of Agricultural Economics designed to identify a bale of cotton from the gin to the cotton mill, in order to put a stop to occasional complaints of false or careless packing. The complaints have largely come from foreign countries which purchase American cotton. It is reported that competitive cotton-growing countries are seldom accused of the practice.



A novel note in towel styling introduced by Cannon Mills in their new line is the use of a rope border design in various colors. Above illustration shows a solid color towel with five-rope design, the rope alternating white and self-color. The effect is achieved by use of yarn floated to produce a rope-like pattern. The line was styled by Virginia Hamill.

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Key Cotton Prices with usual comparisons follow:

	Aug. 2, 1937	July 1, 1937	Aug. 1, 1936	Aug. 1, 1935
Spot Cotton, N. Y.	$10.65	$12.62	$12.89	$12.00
Ditto, high previous month	13.05	13.25	13.65	12.45
Ditto, low previous month	11.18	12.36	12.49	12.00
10s hosiery cones	25	27	25½	27
10s/2 carded skeins	25	26	25½	28
20s/2 carded peeler warps	28	30½	29½	31
60s/2 combed peeler warps	59	60	57	55
60s/2 mercerized cones	77	79	68	70
37 in., 3-yd. drill	9½	10½	8½	8½
38½-in. 64 x 60s	6 1/16	6½	6	5½
36-in. 4-yd. 56 x 60s	7¼	8 3/16	7½	7½
Denim, 2.20s	16	16	14	14

•

Statistics of particular interest to cotton manufacturers showing June operations and the raw material situation:

	June	*May*
Spindle activity (% capacity)	137.0	137.7
Spindle activity (millions of hours)	8,595	9,165
Cotton consumed (bales)	681,394	718,947
Cotton exported (bales)	229,639	373,158
Cotton imported (bales)	35,953	27,735

Cotton

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Wool Digest

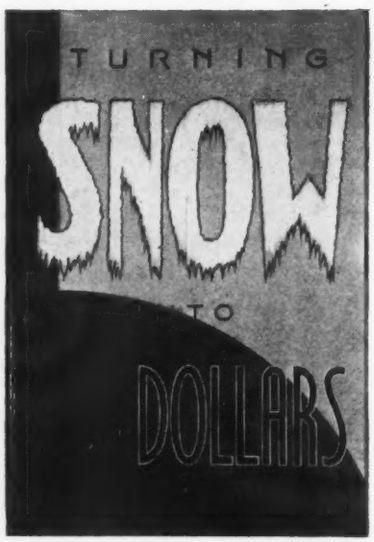
THE financial showing of the American Woolen Co. for the first-half of this year is both a graphic reflection of the improvement in the woolen and worsted industry and a testimonial to the sound policies of the present management.

Nevertheless, it is unwise to draw hasty conclusions therefrom. Particularly is it dangerous to imagine that the industry has achieved permanent prosperity and that its future path will automatically be a golden one. Such an idea might lead to smugness, and the industry is in no condition to survive that infection. Furthermore, those groups outside the industry who stand to gain by creating an erroneous impression of easy profits in wool manufacture might study the records of this particular company from 1924 to 1934, inclusive. It will take many more years of profitable operation to counterbalance the net loss of that decade.—*Editor.*

Tropicals Offered—The opening of men's wear tropical weight suitings came during the last week of July. Prices named showed a rise of 30c over a year ago on most lines and a rise of 35c on gabardines. The 9½ oz. worsted was priced from $1.55 to $1.70. Although there was some bearish talk by buyers, sellers were optimistic of a good season and expressed belief that those opening prices would be the lowest to obtain through the 1938 season. The price difference is not large considering that it must cover two wage advances of 10% each during the twelve months and a gain in raw materials of 15 to 17½%. It means less than $1 more than a year ago in basic cost of materials for a two-piece suit, which, even if expanded to $2 before it reaches the consumer, should not prove a deterrent to the sale of the popular light-weight clothing next year. In fact mill agents expect tropicals to make further gains in volume this new season with a result of placing the regular lines in a less important position.

•

"Turning Snow into Dollars" is the title of a large portfolio issued by Associated Wool Industries for use in showrooms of snow and ski suit manufacturers. The portfolio is based on a survey by Associated Wool Industries of the winter sports field and reviews the tremendous new market that has grown out of new opportunities for winter sports. It points out the new business possibilities in winter sports areas and states that a conservative estimate of the amount of money that will come into winter sports regions during the 1937-38 season may be placed at $4,000,000. "Ten sales aids available through Associated Wool Industries designed to aid the retailer in turning snow into dollars" are listed.



Cover of AWI promotional portfolio shown one-sixth actual size

•

Women's Wear More Active—Settlement of the labor dispute in the cloak and suit trade has given a boost to business in women's wear which had been very quiet. Ending of the strike of wool handlers in Boston relieved the situation on the other end of the market, and aided in a gain of optimism at the close of July.

•

Christmas in July—The Chatham Mfg. Co., Elkin, N. C., on July 2 pay day presented each of its more than 1,000 employees with a gift check about equal to one week's salary, in addition to the regular weekly pay check. Accompanying the surprise bonus was a note of explanation signed by Thurmond Chatham, president. Peerless Woolen Mills, Rossville, Ga., paid a 5% bonus on wages to about 1,400 employees for the first half of this year, during week of July 5 to 10 it was announced by the president, John L. Hutcheson. The 220 employees of Packard Mills, Worcester, Mass., received a bonus of $25 for the first six months of the year. A similar bonus was granted at Christmas.

•

Wool Stocks Below a Year Ago—The quarterly wool stock report as of June 26, 1937, showed total apparel wool stocks (scoured basis) to be 141,850,000 lb., a decline of about 4% from the year previous. The gain of nearly 18% since March 27 is of course a seasonal gain. Carpet wool stocks on June 26 totaled 35,612,000 a gain of 2½% from a year ago and a loss of about 4% from the March quarter. In apparel wools, compared with a year ago, proportionately more is in hands of manufacturers and less in hands of dealers; there is slightly more foreign wool.

•

Tops Steady—There was only a narrow swing in prices for tops as reflected in the Top Exchange's spot prices for the month of July. June ended with spots at $1.14½ and $1.15 was held through most of July with $1.16 at close. Trade in futures was quiet with prices generally steady.

•

TWOC News—Alexander Smith & Sons Carpet Co., Yonkers, N. Y., signed with the TWOC last month following an election among the mill's 5,500 employees. Agreement provides for 7½% wage increase, vacations with pay, 40-hr. week and 8-hr. day, minimum wage of 40c per hr., etc. It was signed by Sidney Hillman for TWOC and runs for a year to July 17, 1938. Until recently the firm had a company union. . . . Windsor Mfg. Co., Philadelphia, faced a strike over TWOC. . . . Wister Spinning Co., Germantown, obtained warrants for nine sit-downers. . . . Dearnley Bros., Germantown, faced a strike. . . . Airlee Woolen Mills, Norwich, Conn., strike ended with signing an agreement.

•

Key wool prices with usual comparisons, follow:

	Aug. 2, 1937	July 1, 1937	Aug. 1, 1936	Aug. 1, 1935
Fine and fine med. territory	$0.97	$.095	$0.84	$.067
Ohio ⅜s	.44	.44	.38	.31½
Tops fine 64-66s	1.18	1.18	1.06	.94
average ⅜s	1.05	1.03	.95	.79
high ½	1.00	.98	.88	.70
Noils, fine	.75	.75	.68	.55
½	.58	.58	.53	.42½
2-40s 60s wstd yarn	1.80	1.80	1.52½	1.37½
8020 serge	2.27½	2.27½	1.82½	Not quoted

•

Current statistics on wool consumption and mill activity:

Wool consumed, clean equiv.	June (4 weeks)	May (4 weeks)
Apparel wool, lb.	20,044,000	22,864,000
Carpet wool, lb.	9,572,000	10,352,000
Machinery activity (40-hr. shift)		
Looms (50-in. and wider)	112.0%	117.7%
Carpet looms	82.2%	85.4%
Combs	126.2%	140.7%
Worsted spindles	90.5%	102.0%
Woolen spindles	120.2%	128.2%

Wool

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TEXTILE WORLD'S

Rayon & Silk Digest

THE customer ran the show. That, in brief, explains the notable success of the Silk Forum held by the International Silk Guild last month. The Forum got down to brass tacks as regards sales prospects in silk, and evolved some sound principles: Take silk completely out of the low and medium priced fields. . . . . Stress richness, exclusiveness, individuality. . . . . These were the keynotes of the event. And because they were rational keynotes, the Forum was a success.—*Editor.*

Silk Strike Starts—A strike reported to affect 40,000 silk textile workers in five States was called last month by T.W.O.C. and became effective Aug. 9. At first the walk-out was understood to have been felt chiefly by commission mills; it was indicated that the larger mills were awaiting results of the strike before shaping policies. Meanwhile, steps were being taken by N. J. and Pennsylvania silk weavers to form a national trade association to be known as the Silk and Rayon Manufacturers Association, to represent these manufacturers in strike negotiations.

•

Acme Signs TWOC Pact—The signing of a collective bargaining contract between Acme Rayon Corp. and the Textile Workers Organizing Committee, was announced by both parties last month. The agreement provides for a 5c hourly wage raise and for arbitration to prevent strikes.

•

Rayon Favored for Satins—The seasonal increase in output of satins has spurred the demand for 100 denier viscose yarn this month, that being probably the only change in the general picture of a tight seller's market.

•

Raw Silk Stronger—Decisive fluctuations marked the raw silk trading during the month, and while prices rose strongly at times, the four week total advance was declared by importers not to exceed five cents.

•

Fabric Situation Uneven—Wide diversity featured fabric selling, with silks and acetates holding fairly firm, especially the novelty wool-like fabrics, and viscose rayon goods generally weak. Rayon weavers are pinning their hopes on increased call from cutters and the piece goods trade for fall which demand should materialize toward the end of this month.

•

New Rayon Record—Rayon filament yarn production, second quarter 1937, totaled 78,450,000 lb. breaking all quarterly production records for the industry, the *Rayon Organon* announced Aug. 6.

•

May Accept Cease and Desist Order—Rayon producers who had opposed acceptance of a cease and desist order in the recently concluded Federal Trade Commission price-fixing inquiry, were undecided this month as to their policy, following issuance of such an order by the Commission. Indications were that they would take no further action.

•

Spun Celanese Suitings Announced—A wide range of men's suitings made from an acetate staple and wool yarn and containing, it was stated, substantially more than 50% acetate staple, was placed on the market last month by Celanese Corp. of America. The suitings include summer and winter weights, most being for the 1938 summer season; among the fabrics is one tropical of 100% spun Celanese which has not yet been priced. Other prices range from 97½c. to $1.75.

•

June Brings Fabric Lull—Deliveries of rayon woven broad cloth reflected the normal seasonal lull in June, this being especially evident in the taffetas, twills, linings and other staples, according to the monthly statistics announced by the National Rayon Weavers Association and the National Federation of Textiles. Key figures follow:

1934 = 100	June 1936	May 1937	June 1937
Taffetas, Twills, Linings and Other Staples	211	260	251
Dress Goods, Novelties, and Other Fancies	73	88	97
Total	121	152	154

•

Fiber Identification—Latest developments in the fiber identification movement were: Irene L. Blunt, secretary, National Federation of Textiles, testifying at a hearing on the Peyser and Martin bills, stressed simplicity of regulation as vital to the success of any such legislation; Belding Heminway Co. announced it would use the word "rayon" on acetate and cuprammonium as well as viscose yarn products, combining brand names such as Celanese and Bemberg with the generic term "rayon."

•

Staple Fiber News—Following are the newest happenings in the staple fiber field: L.A.V. Hoytema, Technische Hoogeschool Mechanische Technologie, Delft, Holland, offers "rayonet" as his contribution to TEXTILE WORLD'S library of suggested staple fiber names; Courtaulds Ltd. have installed dry doubling spindles in their staple plant at Castleton, England; various American carpet firms are studying staple's possibilities in that field; General Motors Corp. approves automobile upholstery fabrics having acetate staple content.

•

On the Labor Front—TWOC lost in Cleveland and won in Covington, Va., in Industrial Rayon Corp. elections to select a bargaining agency for the workers; Industrial reported to have resumed production at Cleveland, with 500 workers; efforts to organize workers in the chief N. J. and Pa. ribbon mills were intensified following signing of an agreement with Century Ribbon Mills which covered the N. Y. warehouse personnel of that firm.

•

Wide Interest in Silk Forum—Post mortem opinions in the fabric trade were strongly favorable to the Silk Forum, held July 20, by the Silk Guild in New York, an article on which appears on page 79 of this issue.

•

Key rayon prices and statistics follow:

Prices	Aug. 2, 1937	July 1, 1937	Aug. 1 1936	Aug. 1 1935
Viscose process				
75 denier (18-30 fils.)	$0.93	$0.93	$0.90	$0.87
100 denier (40 fils.)	.82	.82	.79	.76
150 denier (40 fils.)	.63	.63	.60	.57
Acetate process:				
150 denier	.63	.63	.60	.60
Cupra. process:				
150 denier (112 fils.)	.68	.68	.65	.60
Rayon staple 1½, 3, 4½ and 5½ den. viscose	.28	.28	Not quoted	

Indices of Deliveries †

Month	July	June	May
In year 1937	505	517	530
In year 1936	614	498	428

† Rayon Organon exclusive of Acetate. Daily average 1923–1925 = 100.

•

Key silk prices and statistics follow:

Prices	Aug. 2, 1937	July 1, 1937	Aug. 1, 1936	Aug. 1 1935
Crack XX 13/15 white 78%	$1.80	$1.91½	$1.72	$1.57
Tram, 5thd Japan 85%	2.75	2.74	2.41	2.42½
Tram CrackXX 78%	2.43	2.52	2.31	2.17½
60s-2, spun silk	3.15	3.15	2.95	2.75

Statistics	Imports	Approx. deliveries	Stock at warehouses
July, 1937	41,494	31,399	27,337
June, 1937	40,037	35,278	41,302
May, 1937	35,698	40,561	40,882

Rayon & Silk

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Knit Goods Digest

WHILE it is true that, in the long run, lower prices to the consumer mean greater volume, there are times when a stiffening of the retail price is good news. A case in point is the hosiery association's suggestion that the dollar stocking is returning—in women's full-fashioned, of course. That makes refreshing mid-summer reading. Not only is it good psychology to impress on a market which at best is none too sure of its price levels, but the logic of the upward trend is unassailable. Manufacturing costs are rising steadily, forcing price advances. From 89c, the present retail price for branded lines, to $1 is a jump of only 11c, which—to the consumer whose own position is steadily improving—is a moderate boost. To the trade, the idea of the "dollar stocking" has a magical ring well calculated to strengthen confidence and to make for sounder business.—*Editor.*

Apex Strike Ends—Reopening of the Apex Hosiery Co. mills in Philadelphia, which had been closed by a strike since last May, was being expedited this month, following settlement of the dispute. An agreement which had been drawn up by Edward F. O'Grady, assistant secretary of Labor, was signed by the Apex company heads and by heads of the American Federation of Hosiery Workers on July 29. The agreement provides among other things that: the hosiery union shall be the sole bargaining agent; the plant shall operate as a closed shop on and after February if the union can show then that it has a substantial majority of workers as members; union wages and hours shall prevail; the check-off system shall be in effect for union members who sign cards asking for it. Earl Constantine, managing director of the National Association of Hosiery Manufacturers, termed the settlement "satisfactory and realistic" and added, that it "should be welcomed by all parties concerned."

•

Iridescent Hosiery Watched—With a steadily growing number of mills now offering iridescent, or changeable color, hosiery, in their lines, the market is studying retail and consumer reaction, for guidance as to future prospects of this novelty. It is not expected that any appraisal will be possible before fall.

•

New Association Gets Charter—Formation of the Keystone Hosiery Mfrs. Assn., under way for some weeks, was finally effected last month when the Berks County (Pa.) court granted a charter to the new body. Repeating earlier statements that the organization will not encroach on existing trade associations, George B. Balmer, counsel, said it was an outgrowth of the agreement by which the general Berks County strike was settled last April.

•

"At Sea" Convention Favored—Voting approval of the idea of an "at sea" convention and a trip to Bermuda, the board of directors of the National Association of Hosiery Manufacturers last month authorized a membership poll on the project. The questionnaire also will ask members, if approving the idea, to suggest dates for the event. It is understood that the trip would comprise two days of business meetings on board, totalling four sessions, which would analyze problems and shape policies.

•

Hosiery Shipments Up 1.8%—June 1937 hosiery shipments totaled 9,936,271 doz. pr., a gain of 1.8% from the May total of 9,758,687 doz. pr., according to the monthly figures of the National Association of Hosiery Manufacturers. The chief gains were in woolen goods, up to 38.1%, children's and infants' hosiery, up 34.8% and ribbed goods and women's full-fashioned which rose 6.9% and 3.2% respectively.

•

Underwear Distribution Analyzed—Jobbers buy about half of all knit cotton-wool underwear, but direct sales to retailers predominate in both the knit rayon and silk and the woven cotton athletic lines, according to a report by the Underwear Institute on distribution trends. The Institute also announced that its mill lighting efficiency study was nearing completion.

•

Cheney Gives Underwear Broadcast—The story of what the underwear industry is doing for consumers was broadcast recently by Roy A. Cheney, managing director, Underwear Institute, over WNYC, City of New York Radio Station. Mr. Cheney was interviewed at the microphone by John Black, assistant editor, TEXTILE WORLD. The script of the broadcast is published in the current issue of the Institute's organ *Institute News.*

•

What Will It Do in the Water?—While somewhat disturbed by the big call during the current summer for dressmaker type swimsuits of woven material, manufacturers of knitted bathing-suits sat back this month to await the end-season reaction of consumers. They claim the woven suit is practical only for beach wear, that it won't stand up in test of the water and therefore is not a serious competitor. But they agree the customer's vote will be final!

•

New Ideas in Fall Sweater Styling—End-July found most mills taking orders on women's fall sweaters; the lines stressed various trends, including increased use of imitation suede fronts, classic designs in cardigans, and a growing confidence in the fall prospects for twin sets especially those exploiting contrasting colors.

•

Style Leaders Wear More Knits—Manufacturers of high priced knitted ready-to-wear reported this month that retailers selling to exclusive Atlantic coast resorts find increasing demand among society leaders for knitted suits and dresses to be worn at both informal and formal events.

•

How to Wash Knitwear—Posters giving instructions on how to wash knitted apparel have been distributed to leading retailers throughout the country, through the cooperation of Lux, and with the endorsement of the National Knitted Outerwear Association, the latter organization announces. The instructions emphasize that the garment, after being dipped in suds in lukewarm to cool water, should be gently squeezed, then rinsed and rolled in a turkish towel and dried.

•

Wage Minimums Set—Secretary of Labor Perkins has fixed wage minimums at $14 on seamless hosiery and $13 to $14 on men's underwear, applicable to all goods manufactured under terms of the Walsh-Healey Act.

•

Janssen Kin Head Wytheville Firm—While it was disclosed last month that Richard C. Wetzel and Dr. John E. Livingood, sons-in-law of Henry Janssen, treasurer of Berkshire Knitting Mills, are president and vice-president, respectively, of the newly formed Wytheville (Va.) Knitting Mills, Hugo Hemmerich, Berkshire's general manager, denied emphatically that his firm had any connection with the Southern company. It is reported that the Wytheville hosiery mill will eventually develop into a $1,500,000 organization.

Knit Goods

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TEXTILE WORLD'S

Processing Digest

WITH the increasing use of staple rayon and wool blends, finishers of woolens and worsteds are finding it necessary to modify the methods which they have been following for many years. (A good example of this is described in the article on page 80 of this issue.) But they must not rest content with mere revision of processes. Just as treatment with certain new chemicals vastly improves the properties of rayon, so can treatment with other chemicals eliminate the undesirable characteristics of wool and further enhance those which are desirable.

Working together—and making a skillful "blend" of rayon staple, wool, and applied chemistry—the manufacturer and finisher of wool goods have it in their power to produce fabrics far superior to anything which they have turned out in the past.—*Editor.*

World Dye Production and consumption continued to expand during 1936, with most leading producers making gains in both domestic and foreign sales, according to C. C. Concannon, chief of chemical division, U. S. Department of Commerce. Estimated world production of coal-tar dyes was in the neighborhood of 243,000 metric tons last year, the highest annual figure ever recorded, and compares with 221,500 tons in 1935, and 215,500 tons in 1934. Germany, the United States, Soviet Russia, Great Britain, Japan, Italy, France, Switzerland, and Poland continued the world's leading producers, in the order named, during 1936. As reported in our July issue, production of coal-tar dyes in the United States, recorded at 119,233,551 lb. in 1936, exceeded all previous records. Exports from the United States aggregated 17,400,000 lb. in 1936, against imports of 3,769,000 lb.

•

Not Only Engineers, but dyers and finishers as well, will find much of interest at the meeting of the Textile Division of the American Society of Mechanical Engineers, to be held October 15, at Massachusetts Institute of Technology, Cambridge, Mass. The tentative program calls for the presentation of papers on the following subjects: Recent developments in wet finishing and dyeing machinery; recent developments in drying of textiles; use of superheated steam for drying and future of cotton spindles in the United States.

•

Lacquer Printers have recently organized as the Application Textile Printers Association, Inc., of New York City. Objects of the organization are to promote trade and commerce between its members and those having a common and personal interest in the textile printing industry; to reform abuses and secure freedom from unjust or unlawful exactions; and to secure a uniformity of customs in the trade. Directors and incorporators include: Alexander Leviton, Isidore Blum, George Megibow, and Alexander Diaman, of New York, and Albert Oelbaum and Robert Lew of Brooklyn, N.Y. Legal papers were filed by Attorney Abraham R. Kartzman, 16 Court St., Brooklyn.

•

Acid Dyeing—Further evidence in favor of the chemical theory of acid dyeing is presented in a report prepared by Arthur Smith and Milton Harris, and issued recently by the National Bureau of Standards, Washington, D.C. The report shows that the acid-dye-combining capacity of untreated wool is equal to the acid-combining capacity. Treatment with nitrous acid, hydrogen peroxide, sodium hypochlorite and strong solutions of sulphuric acid decreases the basicity of the wool and correspondingly decreases its affinity for acid dyes. Chlorinated wool, the report shows, absorbs acid dyes at a greater initial rate than untreated wool, but at equilibrium the latter absorbs more dye.

•

More Than 200 IngAclad stainless clad steel dye cans are in use at Southern Bleachery & Print Works. The photograph on this page last month showed 33 of them. A typographical error in the caption made it appear that only about 20 of the dye cans had been purchased. Not a double exposure, but a printer's error was the cause of any confusion.

•

Dyeing Prices Increased—Following the increase in dyeing prices on alpacas and basket-weave sheers put into effect in June, finishers last month announced higher charges on viscose and acetate 2x2s, 4x4s, and satin-backed fancies. Prices now being quoted by leading companies are 9c a yard for basket-weaves, 11c for alpacas, and 6½c for the 2x2s, 4x4s, and satin-backed fancies.

•

Silk Goods Converting, covering dyeing, printing, and finishing of pure-dyed and weighted-silk fabrics; and analysis, costing, and testing of broad silks, ribbons, and pile fabrics, will be covered in an advanced course to be given at Columbia University on Tuesday evenings from February 8 to May 17, 1938. The course will be given by Max Steiner, technician with Stunzi Sons Silk Co., Inc. This course is intended to supplement an elementary course on silk manufacturing which is to be given on Tuesday evenings from September 28, 1937 to January 25, 1938. It may be taken, however, by students who have had sufficient experience in the trade.

•

Trade-Practice Standards for the silk and rayon dyeing and printing industry, originally proposed by the Paterson (N.J.) Industrial Commission, were approved by members of the industry at a hearing held, July 27, under the auspices of the Federal Trade Commission. Judge George McCorkle, director of trade-practice conferences of the F.T.C. presided. The rules were approved almost as quickly as they could be read, with no opposition and with practically no discussion. It was pointed out, however, that the F.T.C. will consider any suggestions for changes or amendments submitted to it before it issues a revised draft of the rules to members of the industry for their final acceptance. William J. Matthews, counsel for the National Association of Finishers of Textile Fabrics, had placed in the record a reservation that his organization be permitted to recommend any changes it deemed advisable after it meets next week; and Carl Holderman, New Jersey regional director of the Textile Workers organizing committee of the C.I.O., announced that he will file a brief incorporating rules concerning unfair practices "for which labor has been made the scapegoat." The following committee was elected to cooperate with the F.T.C. in putting the standards into effect: E. G. Alberque, Passaic Piece Dye Works; Bert Allen, Gaede Silk Dyeing Co.; Jack Illingsworth, Waldrich Bleachery; C. Dimick, Textile Dyeing & Finishing Company of America; and Al Bohny, Modern Central Piece Dyeing Co., Further details on page 71.

•

As we go to press, silk and rayon printers are studying a revised plan offered by General Johnson to stabilize the finishing industry. As revised, the plan includes both printers and dyers and calls for the establishment of a trade association to enforce agreements regarding secret rebates, act as a credit bureau and bill-collecting agency, etc.

Processing

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Mill News

Cotton Mill News

Anniston (Ala.) **Mfg. Co.**, has completed building extension and machinery rearrangement adding approximately 2,000 spindles to the plant. New Saco-Lowell spinning and roving, and new Draper X-model looms were installed. J. E. Sirrine & Co. were the engineers.

Bridgeport (Conn.) **Web Co.** has bought the former Challenge Cutlery Co. plant in Bridgeport, containing 50,000 sq. ft. The company will occupy the entire second floor, continuing to lease ground floor to present tenants. B. R. Bresler is president of the Web company.

Powdrell & Alexander, Inc., Danielson, Conn., for six months of 1937 reports net profit of $203,197, compared with $139,546 for similar period of 1936.

American Narrow Fabric Co., New Haven, Conn., has been taken over by Ansonia O. & C. Co., Ansonia, Conn., and the former corporation dissolved, with Leslie S. Bailey of 153 Main street, Ansonia, designed to receive claims.

W. J. & C. Bedspread Co., Dalton, Ga., has leased a two-story building at Ellijay, Ga., previously used as a school, and will remodel and equip for production of bath mats, bedspreads and kindred products. J. K. McCutcheon heads the company.

Georgia-Kincaid Mills, Griffin, Ga., is moving into the new extension to No. 2 mill, located outside the city, some of the equipment formerly in No. 4 mill, located in the city, and which will be abandoned. The oldest equipment will be discarded and replaced with modern machines, including Whitin long-draft spinning with overhead American Mono-rail cleaning system, Foster high-speed winders, Saco-Lowell high-speed warpers with Foster magazine creels. R. O. Pickens Slasher Hood Co. is installing a new and modern slasher exhaust system. Bahnson Co. is reworking present humidifier system and installing additional heads. Wherever present equipment is being moved and used, it is being thoroughly overhauled. J. E. Sirrine & Co. are the engineers.

Bibb Mfg. Co., Reynolds, Ga., has installed two new Whitin one-process pickers.

Arnall Mills, Sargent, Ga., are installing 5,500 spindles, the work being done by Yates D. Smith, of Gastonia, N. C.

Kendall Co., Boston Mass., has let general contract to O. D. Purington Co., Inc., Providence, R. I., for new one and two-story additions to bleachery at Walpole, Mass., 48 x 80 ft., and 82 x 128 ft., respectively; also for alterations and improvements in chemical building at same mill. Cost close to $100,000, including equipment. Lockwood Greene Engineers, Inc., Boston, are architects and engineers. Kendall Co. reports net profit for first 24 weeks of 1937 of $885,709, compared with $288,445 for similar 1936 period.

Acadia Mills, Lawrence, Mass., are in process of liquidation.

Rockdale Mill, Inc., New Bedford, Mass., is seeking permission to demolish mill No. 2, formerly belonging to Sharp Mfg. Co.

Wamsutta Mills, New Bedford, Mass., is installing new looms to meet demand for its products.

Summit (Miss.) **Textile Co.**, has begun installation of additional equipment at local cotton yarn and twine mill.

Tupelo (Miss.) **Cotton Mills**—V. S. Whiteside, Tupelo, president, Peoples Bank & Trust Co., has been appointed receiver for this company, in bond of $80,000, following recent decision of board of directors to liquidate.

Thompson Novelty Curtain Co. is removing machinery from Greenville, N. H., to occupy the ground floor in the Tom Wye, Inc., mill at Winchendon, Mass., now owned by the town. It will receive free rent for a short time.

Harmony Mills, Cohoes, N. Y., will be sold at auction late in August according to John Skinner, treasurer. Plant has been closed for four years.

Standard Tytape Co., Asheboro, N. C., is installing machinery in a new addition recently completed.

Osage Mfg. Co., Bessemer City, N. C., has erected a three-story addition, 56 x 187 ft. in which 5,016 additional spindles, 103 additional looms, 84 of which are for dobby work, have been installed.

Central Falls (N. C.) **Mfg. Co.** is installing new looms and auxiliary equipment. The company recently completed an addition.

Durham (N. C.) **Mfg. Co.** has completed a modernization program including installation of automatic looms, etc.

Norlina Cotton Mills, Inc., Gastonia, N. C., has been organized to manufacture yarns, cloths, etc. Authorized capital is $100,000; subscribed stock, $300. Incorporators: J. L. Gray, J. L. Gray, Jr., and W. C. Rustin, all of Gastonia. Its headquarters is the present location of the Gray Mfg. Co.

Lowell Textile Institute, Lowell, Mass., has completed plans for new three-story addition to its chemistry building, 19 x 60 ft., estimated to cost about $130,000, with equipment, and will begin work soon. Ashton & Huntress, Lawrence, Mass., are architects.

Minette Mills, Grover, N. C., has installed a two-kier, 600 lb. package and beam-dyeing unit from Gaston County Dyeing Machine Co.

Oakdale Cotton Mills, Jamestown, N. C., have completed installation of new equipment, replacing old type. This includes the replacement of 26,216 spindles with Whitin long-draft frames, individual motor driven; 10 Whitin large-package twisters have been installed, and all intermediates will be changed to long draft slubbing.

Neuse (N. C.) **Mfg. Co.**—Real estate, buildings and equipment at this mill are being sold by D. P. Johnson, receiver.

Newberry (S. C.) **Cotton Mills** will carry out an expansion and modernization project in its mill village for employees, including erection of a number of new dwellings. General contract has been let to C. M. Guest & Sons, Anderson, S. C.

Sanford (N. C.) **Cotton Mills** have completed a new addition in which 3,000 spindles are being installed. This is the second addition to be completed by the mills this year, the other being finished in April.

Stonecutter Mills, Spindale, N. C., have installed large twin-unit Inversand water softener.

Valdese (N.C.) **Mfg. Co.** has installed additional package dyeing equipment furnished by Gaston County Dyeing Machine Co. and modernized one of their kier units.

Alvin Beaming Co., Philadelphia, Pa., plans rebuilding of portion of mill recently damaged by fire, with loss reported over $30,000.

Narrow Fabric Co., Inc., Reading, Pa., will open a mill in Ontario to regain British trade, according to Samuel B. Fry, general manager. The new concern, capitalized at $100,000 and to be known as the Narrow Fabric Co., Ltd., of Canada, will be located at St. Catharine's, Ontario. It will have the same officers as the parent company with Henry Janssen, president; H. M. Fry, vice-president and secretary; Ferdinand Thun, treasurer; Samuel R. Fry, general manager. Between 500 and 1,000 braiding machines will be installed by Oct. 1 in a one-story brick building, formerly occupied by the L. O. Hudson Hosiery Mills. Elastics, trimmings, shoe-laces and all types of plain and fancy braids will be made.

Scranton (Pa.) **Lace Co.** has awarded general contract to A. J. Sordoni Construction Co., Scranton, for one-story addition to mill. Cost estimated close to $75,000, with equipment. It will be 112 x 122 ft.

Anderson (S. C.) **Cotton Mills** are removing old equipment and installing new machinery in connection with a modernization and improvement program. Work is scheduled for completion late in the fall and will represent an investment of about $500,000. J. P. Abney heads the company.

Orr Cotton Mills, Anderson, S. C., is installing 22,000 spindles of new Whitin long-draft spinning equipped with G.E. individual motors and Rockwood pivoted-base drives. J. E. Sirrine & Co. are engineers.

Bath (S.C.) **Mill** has replaced dyeing equipment with latest type system furnished by Gaston County Dyeing Machine Co.

Bowling Green (S. C.) **Spinning Mills** broke ground July 3, for erection of a 66 x 28 ft. annex to present plant, which when completed, will house 10 additional carding machines.

Hermitage Cotton Mills, Camden, S. C., announce plans for the installation of a number of 100 X Model looms, replacing discarded and out-of-date equipment. Firm has revamped its mill buildings.

Springs Cotton Mills have completed an addition to the cloth and sewing department of the Gayle plant at Chester, S. C. The addition measures 100 x 100 ft. On the first floor of the addition additional looms will be installed, and the second floor is being used for an expansion of the sewing department.

Clover (S. C.) **Spinning Mills** reopened in July after complete renovation. T. B. Hunt, formerly superintendent of Atlantic Cotton Mills, Macon, Ga., is in charge.

American Spinning Co., Greenville, S. C., has recently completed an extensive modernization program under the direction of J. E. Sirrine & Co., engineers. The building changes included removal of several brick cross-walls, replacement of old wood sash with steel windows, new roof, new lighting system, installation of two high-speed General Elevator Co's self-levelling elevators, and new cooling and ventilating system for slasher room. Opener room, picker room and card room were reorganized using mostly old equipment. Drawing was replaced with new Whitin drawing frames. New Whitin long-draft spinning was installed, also new Barber-Colman Co's automatic spooler and super-speed warper.

Brandon Mills, Greenville, S. C., is completing a new spinning installation consisting of approximately 23,000 Saco-Lowell long-draft spindles. J. E. Sirrine & Co. are the engineers.

Dunean Mills, Greenville, S. C., recently awarded to Fiske-Carter Construction Co. contract for the erection of a two-story brick cotton warehouse.

Mathews Cotton Mill, Greenwood, S. C., has superstructure under way on new one-story addition, reported to cost over $65,000, with equipment. Completion is scheduled early in the fall.

Panola Mills, Inc., Greenwood, S. C., have been chartered with capital of $200,000, to take over and operate the Panola Cotton Mills.

Inman (S. C.) **Mills** has completed a modernization program which included the installation of 10,000 Saco-Lowell long-draft spindles equipped with S K F bearings. All frames had individual G.E. motors and B-belt drives. J. E. Sirrine & Co. were the engineers.

Piedmont (S. C.) **Mfg. Co.** is installing a new 1,450 hp. Leffel water wheel turbine direct coupled to a General Electric Co. vertical shaft generator.

Oconee Textiles Inc., Westminster, S. C., is installing three new No. 44 winders purchased from the Universal Winding Co. to replace older equipment. J. E. Sirrine & Co. are the engineers.

Hope Webbing Co., Pawtucket, R. I., voted July 22 to continue business in Pawtucket. It had been ordered recently to seek a new location because of strikes.

Bonham (Tex.) **Cotton Mills** have concluded negotiations for purchase of former mill of the **South Texas Cotton Mills**, Brenham, Tex., idle for a number of months. Improvements

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will be made in buildings and equipment. New owner will operate as a branch mill.

Mexia (Tex.) Textile Mills have purchased a new high-speed warper which is to be installed in the mill.

Riverside & Dan River Cotton Mills, Danville, Va., is installing a 4,000,000 gal per day gravity air-water-wash filtration plant constructed by Hungerford & Terry, Clayton, N. J.

Canadian Cottons, Ltd., has ordered a complete Sanforizing unit for pre-shrinking cotton fabrics in its plant at Cornwall, Ont.

Dominion Textile Co., Ltd., Montreal, Que., has awarded general contract to Anglin-Norcross, Ltd., Montreal, for five-story addition to Magog (Que.) Print Works, to cost close to $500,000.

Empire Cotton Mills, Ltd., Welland, Ont., has plans under way for new one-story and basement addition on Hager St., 100 x 225 ft., estimated to cost over $125,000.

Wool Mill News

American Felt Co., Glenville, Conn., has approved plans for new one-story addition, 15 x 32 ft., for which superstructure will be placed under way at once.

Thames Valley Woolen Co., Norwich, Conn., is a new corporation formed to take over the property of Joseph Hall & Son, Inc., which exercised 77B. Joseph H. and Ralph G. Hall of Hartford head the list of incorporators. About 200 will be employed in the mill.

Clinton (Mass.) Weavers, Inc., a new carpet company, will start operating immediately in the west wing of the Water Street mill at Clinton, according to Raymond A. Mott, industrial manager of the Clinton Chamber of Commerce. O. W. Baer is president and manager. For 15 years he was promotion manager of the Bigelow-Sanford factory at Clinton. Samson M. Peacock, New York, who has been credit manager of the Bigelow-Sanford, will be associated with the new company in an executive capacity. Seven narrow velvet looms of modern Crompton & Knowles manufacture, will be installed.

Star Worsted Co., Fitchburg, Mass., in liquidation for several months, has arranged for the sale of all the land, buildings, machinery and equipment owned by the corporation, to the **Aetna Mills,** known as the Sherriffs Worsted Co. The owners will carry on operations.

Farr Alpaca Co., Holyoke, Mass., is expanding operations in its dyeing division and will handle dress fabrics for converters.

American Woolen Co., Lawrence, Mass. has received permit to construct a $25,000 addition to its **Ayer Mill,** to be used for garage and manufacturing purposes; 68x86 ft., 3 stores.

Brampton Mill, Newport, N. H., plans rebuilding of portion of warehouse unit, recently damaged by fire. Loss estimated at $10,000.

Gonic Mill, Rochester, N. H., has laid a new pipe line between the dye house and finishing room, installed new pumps and motors in the boiler room, and made other improvements.

Scholes-Penn Felt Co., Camden, N. J., has been organized with capital of $50,000, to operate a mill. Company is represented by Francis J. Smith, Wilson Building, Camden, attorney.

Marshall Field & Co., New York, N. Y., have discontinued operations permanently at former carpet and rug mill at Fairhill and Cumberland Sts., Philadelphia, Pa., and property is being offered for sale. Machinery and equipment were removed recently to company mill at Leakesville, N. C.

Kenwood Mills, Rensselaer, N. Y., operated by F. C. Huyck & Sons, have awarded general contract to W. G. Sheehan Construction Co., Albany, N. Y., for new one-story dyehouse described in our June issue.

Alexander Smith & Sons Carpet Co., Yonkers, N. Y., has begun erection of new one-story addition, to be used for general service. Alterations and improvements will be made in present buildings. Entire project will cost $35,000.

Fleisher Mills property in Philadelphia, has been conveyed by the bondholders protective committee to Fleisher Industrial Center, Inc., a holding company, which was in turn conveyed to S. V. Quackenbush of Scranton. It will continue to be used as a tenant mill for light manufacturing.

Philadelphia (Pa.) Felt Co. has purchased from the S. S. White Dental Mfg. Co., a factory building at Unity and Oakland Streets, at a price said to be $90,000.

Rideau Waste Co., Ltd., has been organized to operate a mill at Merrickville, Ont. The plant is operated by F. Scholes, superintendent of the Montreal Blanket Co., for the last seven years.

Renfrew Woollen Mills, Renfrew, Ont., is installing new looms and equipment in its plant to increase production. J. J. Southern, general manager, reports that further expansion involving purchase of looms and new dyeing and finishing equipment, is being considered.

Sidney Blumenthal & Co., Shelton, Conn., is constructing a new dyehouse at a cost approaching $150,000. Turner Construction Co. has the contract. Plant will be ready in November.

Rayon & Silk Mill News

R. & K. Silk Corp., Bethel, Conn., which recently started operations, has incorporated with $50,000. Mildred Hoey, 36 Jefferson Ave.; Mary L. Dunham, and Lewis L. Steinfeldt, all of Danbury, are listed as incorporators.

Cheney Brothers, Manchester, Conn., has received a final decree under 77B reorganization proceedings. The petition was originally filed April 26, 1935.

Tingue Fabrics Corp., Seymour, Conn., has been chartered with capital of $36,000, to manufacture silk and rayon products. Company will take over and occupy former local mill of **Tingue Textile Corp.,** De Forest St., closed for some time. Robert L. Cookingham is one of the incorporators of new company.

Leiss & Sussman Mfg. Co., Willimantic, Conn., will build an addition to employ 150 persons on fine transparent and satin-back velvets.

Nemasket Mill, Taunton, Mass., has been rehabilitated and is being started upon spinning rayon staple after two years' idleness.

Union, Miss.—A committee of local citizens has plans maturing for the construction of a one-story mill, totaling about 20,000 sq. ft. of floor space, to be occupied as a silk throwing plant by a company whose name is temporarily withheld.

Belding-Heminway Co., New York, reports net profit for first six months of $355,027 against $298,784, for similar period in 1936.

C. K. Eagle & Co., Inc., New York, N. Y., is being reorganized under Section 77B of the Bankruptcy Law. The company lists liabilities at $708,200, exclusive of stock, and at $4,775,000, with stock included; assets are stated at $5,875,983. The RFC holds a lien on company mills at Shamokin, Bellefonte, Gettysburg, Phoenixville and Kulpmont, Pa., as security for a loan of $708,265, made a number of months ago.

Ogdensburg (N. Y.) Silk Mills are planning installation of new looms for production of fabric to be finished as oiled silk.

Skenandoa Rayon Corp., Utica, N. Y., plans early installation of additional equipment to provide increase in capacity. Work is scheduled for completion in the fall, when mill will have a rating of about 7,500,000 lb. per annum, a gain of close to 2,000,000 lb. over present capacity. A refinancing program was authorized by stockholders.

American Enka Corp., Enka, N. C., is continuing its expansion program, previously noted in these columns, and has let general contract to Daniel Construction Co., Anderson, S. C., for one-story mill addition, to be used largely for warehouse service, at contract price of $46,987. B. F. Sturtevant Co., Hyde Park, Mass., is installing air conditioning systems in the laboratory and several other departments.

Abbeville (S. C.) Rayon Mills announce that plans have been completed for the construction of 150 additional dwellings to be sold to the operatives at a cost of from $650 to $1,200 each and including lot.

Kingsboro Silk Mill, Daisy, Tenn., subsidiary of the Kingsboro Silk Mills, Inc., Gloversville, N. Y., announces that about $35,000 is being expended on an expansion program at the Daisy plant. A dyeing unit will be added.

Victoria Mills, Inc., Petersburg, Va., recently organized, have taken over local mill and property of the **Quaker Silk Co., Inc.,** which recently discontinued operations. It is proposed to reopen the mill early in August. E. P. Grossman is president.

Celanese Corp., New York, N. Y., will construct and operate proposed new rayon mill on tract of 1200 acres of land in Giles County, Va., vicinity of Pearisburg, Va., acquired by American Cellulose & Chemical Mfg. Co., Ltd., New York, noted in these columns in July. Last mentioned company is a subsidiary of Celanese Corp.

Duplan Silk Corp., New York, N. Y., has let general contract to John P. Pettyjohn & Co., 212 Eighth St., Lynchburg, Va., for its branch mill at Grottoes, Va., previously described.

Knitting Mill News

Argyle Knitting Co., Los Angeles, Calif., has been organized with capital of 1000 shares of stock, to operate a mill, and will take over and succeed to company of same name at 939 South Broadway. Incorporators include Herman S. Zaekaner and Jerome Fein.

Holly-Maid Knit, Ltd., Los Angeles, Calif., was sold June 25 to M. P. Kaplar, doing business as the **Southland Knitting Mills.**

Walton Hosiery Mills, DeFuniak Springs, Fla., recently purchased six new knitting machines. Capacity will be doubled when the work is completed, according to Stephen Weiss and Blair Kline, owners and operators.

Crisp Hosiery Mills filed petition for a charter under the name of **Maywood Silk Hosiery Mills, Inc.,** Cordele, Ga., the week of July 19. The petition was in the name of E. D. Smith, Jr., E. L. Cody, and E. P. Rogers.

Pittsfield (Me.) Knitting Mill has started up. Perley A. Wright, owner, has installed spinning equipment to produce the necessary yarn.

Propper-McCallum Hosiery Co., Inc., Northampton, Mass.—Plan of reorganization for this company has been approved by the Federal Court. The operations of the company for the next five years are to be under the supervision of a board of five directors. Creditors, with claims aggregating $800,000, are to be paid 75c on the dollar. The mill is giving employment to about 700 workers. Company has recently secured a loan from RFC approximating $200,000 and like amount has been raised by the Northampton Chamber of Commerce and local citizens to insure continuance of the industry. A fight is brewing against legal fees totaling $100,000.

G. H. Tilton & Son Co., Laconia, N. H.—Property of this company has been acquired at a receivers' sale by Charles F. Carroll, formerly mayor of Laconia, S. G. Camann, and associates, on a bid of $23,500. Plans are under way for the organization of a new company to take over and operate the mill. The firm's plant at Northfield, N. H., has been purchased by Walter F. Duffy, who controls the Acme Knitting Machine & Needle Co., Franklin, N. H., and the Belmont (N. H.) Hosiery Co. Two parcels, on one of which, is

ADVERTISING PAGES REMOVED

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a brick factory building, brought $9500 at a sheriff's sale.

Sulloway Hosiery Mills, Franklin, N. H., has installed a new hydro-electric plant, generating 565 volts, three-phase, 60-cycle current to supply power for the plant on the opposite side of the Winnipesaukee River. Power plant was constructed by the company's maintenance department under the supervision of Edmund J. Garneau, master mechanic.

Algro Knitting Mills, West New York, N. J., has leased one of the buildings at the former plant of the Michelin Tire Co., Milltown, N. J., now held by the Michelin Realty Corp., and will occupy for new plant. The structure, known as Building No. 13, totals to 47,000 sq. ft. practically doubling the area of West New York plant, which will be removed to new location.

Blood Mfg. Co., Inc., Amsterdam, N. Y., recently organized by interests identified with the Hamilton-Carhartt Manufacturer, Ltd., Toronto, Ont., manufacturer of work clothes, has acquired mill and business of Blood Knitting Co., and will take immediate possession. New owner will continue operation of plant at same location and for same line of production as heretofore. Mortimer Kasler will be president of new company; and Walter W. Weisman, treasurer; last noted is connected with the Aetna Industrial Corp., 11 West 42nd St., New York, N. Y.

Rensselaer Knitting Mills, Inc., Brooklyn, N. Y., has been chartered with capital of $20,000, to operate a local mill. New company is represented by Milton H. Goldson, 1457 Broadway, New York, attorney.

Millfay Mfg. Co., Buffalo, N. Y., stockholders are being advised that officers recommend liquidation. Plant has been closed since December because of labor difficulties.

Beaunit Mills, Inc., Cohoes, N. Y., has work under way on new one-story addition on Vliet St., for which contract recently was let to G. F. Wertime Co., Trull St., Cohoes. Improvements will be made in boiler house at mill, including construction of a new 150-ft. stack, installation of boiler unit and accessory equipment. Cost estimated close to $45,000.

Barbizon Knitwear, Inc., New York, N. Y., has been organized with capital of $30,000, to operate a knitting mill. Company is represented by Leo J. Margolin, 129 West 42d St., New York, attorney.

Dorset Knitters, Inc., New York, N. Y., care of the Lawyers' Office Supply Co., 180 Broadway, has been chartered with capital of 100 shares to operate a knitting mill.

McCrary Hosiery Mills, Inc., Asheboro, N. C., have work under way on remodeling and improving one-story buildings on North St., and will use for expansion in warehouse division.

Sellers Hosiery Mills, Burlington, N. C., is installing 12 full-fashioned hosiery machines in its new addition, not "automatic" machines as incorrectly reported last month.

Hickory (N. C.) Knitting Mills, Inc., has been chartered, with an authorized capital of $150,000, with Carl V. Cline, Carl V. Cline, Jr., and Mrs. Mary L. Cline all of Hickory, and J. Lee Cline of Hildebran, N. C., the incorporators. Mr. Cline, Sr., recently purchased three buildings from the Hickory Hosiery Mills, Inc., two of which will be occupied by the new concern. New machinery is now being installed.

Pacolet Knitting Mill, Lynn, N. C., was damaged by a fire which destroyed the dye plant on July 16.

Jantzen Knitting Mills, Portland, Ore., have awarded general contract to Dougan-Hammond Construction Co., Rothschild Building, Portland, for two-story and basement addition, 100 x 180 ft., on N. E. Glisan St., to be used primarily for storage and distributing division, costing about $75,000.

Ephrata (Pa.) Knitting Mills, Inc., has been incorporated to manufacture hosiery and similar merchandise, with $5,000 capital. Incorporators are Adolph Pross, Frank Millmond and Joseph Flickstein.

Lucille Knitting Co., Philadelphia, Pa.—Majority interest has been obtained by Alexander and James Scott who have been elected president and secretary-treasurer respectively.

Vogue Sik Hosiery Co., Philadelphia, Pa., has by action of its directors decided to discontinue and liquidate its business.

Junior Hosiery Co., Reading, Pa., has added to its line of hosiery children's golf hosiery. Initial installation on this line is 12 machines.

Vanity Fair Silk Mills, Reading, Pa., are constructing a new mill at Monroeville, Ala. When completed, it will employ about 500 and will be operated as a branch of the Reading Mill.

Fairy Silk Mills, Shillington, Pa., has been continued in the hands of Receiver E. S. Jenckes until Jan. 20, 1938. Permission was given the receiver to purchase a new tenter machine, with blowers and drying apparatus, at a cost of $10,000. The new machine will replace obsolete equipment.

Borden & Beck Hosiery Mill, Cranberry, S. C., recently organized, will occupy a new two-story building, 35 x 60 ft., to be erected on local site by the Cranberry Iron & Coal Co., under long-term lease. Initial installation will include 50 knitting machines and auxiliary equipment.

Spartan Hosiery Mills, Inc., Spartanburg, S. C., has been organized with capital of $10,000, to take over and succeed the Spartan Hosiery Co., with local mill on Dunbar Ave.

Davenport Hosiery Mills, Inc., Chattanooga, Tenn., have completed the installation of a new and modernized lighting system in mill.

Cumberland Hosiery Mills, Inc., has begun operations at Nashville, Tenn., with Paul Gable, proprietor. Twelve Banner knitting machines and auxiliary equipment constitute the initial equipment.

Dixie Hosiery Mills, Newport, Tenn., now completing reorganization, has approved plans for immediate erection of a one-story addition, 40 x 300 ft. New unit will be used to house equipment being removed from Sevierville, Tenn., plant of company.

Silktex Co., Dallas, Tex., manufacturer of hosiery has leased a floor in local Perkins Building and will remove present plant to new quarters and increase capacity.

Galax (Va.) Knitting Co., Inc., has arranged for increase in capital from $200,000 to $400,000, for general expansion in operations.

Lynchburg (Va.) Hosiery Mills will install dyeing machinery in its new addition, measuring 50 by 140 ft.

Wytheville (Va.) Knitting Mills, previously referred to as setting up a plant for 50 of the latest 51-gauge, Reading f.f. hosiery machines, is associated in management with Berkshire Knitting Mills and other Wyomissing Industries units of Reading, Pa. Richard C. Wetzel is president; Dr. J. E. Livingood, vice-president and treasurer; Minnie J. Livingood, vice-president, and Helen J. Wetzel, secretary. The last two are daughters of Henry Janssen, president of Textile Machine Works, and Dr. Livingood is secretary of Berkshire. The Wytheville concern, however, has no corporate connection with any other firm, it is said.

Columbia (Wis.) Knitting Mill is erecting an addition to double its capacity of men's socks.

E. E. Paquette & Sons, Woodstock, Ont., are making a small extension to their hosiery plant.

Processing Plant News

Mowry Finishing Co., Glastonbury, Conn., has been organized with capital of $135,000, to operate a dye and finishing mill specializing on rayon fabrics. New company will take over the former mill of the **Glastonbury Knitting Co.,** Addison, Conn., recently acquired by Harold L. Mowry, Stafford Springs, Conn., who heads the new organization. Henry H. Hunt, South Glastonbury, Conn., also is interested in new company. Equipment installation will cost over $75,000.

Pond Lily Co., New Haven, Conn., plans rebuilding and alteration to present dyehouse at a cost of $16,000. An entire new brick wall will be built, with a new roof and new supporting steel columns and beams.

Windsor Print Works, North Adams, Mass., will continue in operation during the pending reorganization of Consolidated Textile Corp., and indefinitely thereafter, according to statement by Referee Olney after consulting all interests to the case.

Cliftona Print & Dye Works, Clifton, N. J.—In connection with reorganization of this company under Section 77B Bankruptcy Law, now in progress, it is proposed to arrange for $60,000 in additional capital, to provide for operations at the mill and other financing. Company has been continued in possession.

William Willheim Co. is operating the screen printing unit at Lodi, N. J., formerly run by the United Piece Dye Works.

Astoria Textile Print Works, Inc., Passaic, N. J., has been incorporated with capital of $100,000, to operate a textile dye and print works. Company is represented by Milton M. Richmond, 625 Main Ave., Passaic.

Passaic (N. J.) Print Works, in receivership and closed, was destroyed by fire July 23 entailing loss set at $75,000. Much of the machinery had been sold and removed from the building.

Acme Dye Works, Paterson, N. J., is in hands of H. S. Albert as receiver.

Castle Piece Dye Works, Paterson, N. J.—Joseph Knapik has been appointed custodial receiver for this company by Vice-Chancellor Vivian M. Lewis, in bond of $1,000.

Colonial Print Works, Paterson, N. J., have installed a twin-unit Inversand water softener plant.

Cramer Print Works, Inc., Paterson, N. J., have been organized with capital of $125,000, to operate a textile print and dye works. Company is represented by Harris J. Westerhoff, 5 Colt St., Paterson, attorney.

Hamilton Print Works, Inc., Paterson, N. J., has taken title in the name of the Raywin Realty Co., a subsidiary, to the former plant of the Triplex Safety Glass Co., Clifton, N. J., which has been purchased by company at stated price of $165,000, and not leased, as previously noted.

Textile Print Works, Long Island City, N. Y., has been acquired by Henri Merle, who will operate it as president of the Astoria Textile Print Works. Mr. Merle was for 22 years in charge of printing for United Piece Dye Works. He will now do both roller and screen printing.

Capitol Piece Dye Works, Inc., New York, N. Y., care of the Albany Service Co., 315 Broadway, New York, has been organized with capital of 100 shares of stock, no par vaue, to operate a textile dye and finishing works.

Modern Piece Dye Works, Inc., New York, N. Y., has been chartered with capital of 200 shares of stock, to operate a dye and finishing mill. Company is represented by Alfred H. Schaffer, 19 West Forty-fourth St., New York, attorney.

Standard Textile Products Co. reorganization plan was given a hearing on Aug. 10 in New York.

Armco Finishing Co., Greensboro, N. C., is installing Inversand water softener at its new plant.

Cloverdale Dye Works, High Point, N. C., are installing a 2-kier, 600-lb. dyeing unit.

L. E. Wilkin, Greenfield, Ohio, has purchased the machinery and equipment of the dye mill of Groff-Bragg Textile Corp., at Adrian, Mich., and will remove at once to a building in Greenfield, where new dye and bleach works will be operated. The Groff-Bragg company will continue production at its main plant at Toledo, Ohio, as heretofore.

Glenlyon Print Works, Phillipsdale, R. I., has filed plans for a one-story and basement pump house 25 x 55 ft. Gate screens, gate hoists, concrete basin and pipe lines are included in the project, plans for which were prepared by **Charles T. Main, Inc.,** Boston.

Dixie Mercerizing Co., Chattanooga, Tenn., has contracted with Hungerford & Terry for a large caustic soda filter.